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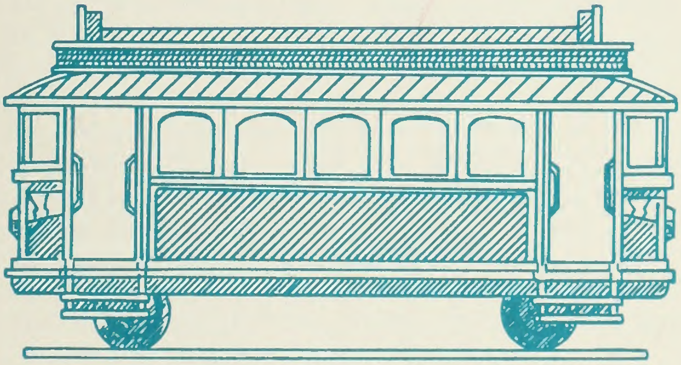

August 10-14, 1970

San Francisco, California

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FOREWORD

The papers presented herein were given at the Bureau of Land Management Planning Conference held in San Francisco, California, August 10-14, 1970.

This conference was attended by approximately 70 planning specialists from BLM State Offices, Service Centers, and the Washington Office. In addition, a cross section of Bureau management officials participated along with representatives from several other Federal agencies.

The conferees' purpose was to evaluate Bureau experience to date with the Multiple Use Planning System, and to investigate future needs for improvement or revision.

The papers fall in two categories. Some treat the subject of land use planning as it relates to many planning systems in general. The general papers are presented in this volume, Part One, Proceedings.

The rest of the papers concern specific aspects of the BLM Planning System at the present time -- its strengths, weaknesses, and so forth. These papers, and the discussions which grew around them provide some basis for system improvement. Because use and improvement of the Planning System will continue mainly under the direction of State Office Planning Coordination Staffs, Part Two, Technical Papers, is being sent only to the State Offices and Service Centers at this time.

The papers are printed as presented. No attempt was made to record and reproduce all the questions, answers, and discussion generated by the papers.

December 1970

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AUG 19 1970

Memorandum

To: Chief, Division of Program Development

From: Director

Subject: San Francisco Planning Conference

The Assistant Director, Legislation and Plans, has given us a preliminary report on the Bureau's Planning Conference in San Francisco, August 10-14. He has marked the Conference "excellent" in all respects: physical arrangements, program content, attainment of objectives, participation of conferees, quality of contribution by all participants including guest speakers, etc. He characterizes our planning team, both in Washington and the field, as "most impressive" and reports very favorable comments from the guests who observed them in action.

We want you to make sure that all participants in the Conference know how pleased we are to receive this report. Planning is an important key to the future role of the public lands in the American environment and economy and we are counting on the Bureau's planners to continue their fine performance.

Boyd L. Rasmussen

United States Department of the Interior

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TABLE OF CONTENTS

Part One

Page

PLANNING CONFERENCE AGENDA 1

INTRODUCTION TO CONFERENCE 3

Irving Senzel
Assistant Director, Legislation and Plans
Bureau of Land Management

PLANNING - FOR WHOM? 7

John Mattoon
Chief, Office of Information
Bureau of Land Management

STATE DIRECTOR'S ROLE IN PLANNING 11

J. R. Penny
State Director, California
Bureau of Land Management

THE STATE DIRECTOR'S ROLE IN PLANNING 15

Daniel P. Baker
State Director, Wyoming
Bureau of Land Management

THE STATE DIRECTOR'S PLANNING TEAM 19

Robert V. Cummins
Bureau Systems Coordinator, Denver Service Center
Bureau of Land Management

CHALLENGE OF THE FUTURE 27

Michael Frome
Conservation Editor
Field and Stream Magazine

TABLE OF CONTENTS (CONTINUED)

Page

THE PROCESSES OF CHANGE 39

Ronald D. Hofman
Division of Program Development
Bureau of Land Management

INFORMATION SOURCES AND TECHNIQUES 49

Herman D. Ruth
City and Regional Planning Consultant
Berkeley, California

THE FUTURE OF BLM 63

Irving Senzel

SYSTEMS PROCEDURES EVALUATION OVERVIEW 67

Robert Twiss
Department of Landscape Architecture
College of Environmental Design
University of California
Berkeley, California

CLOSING REMARKS 75

Irving Senzel

PLANNING CONFERENCE AGENDA

August 10 – 14, 1970

New Federal Building, Room 13450
650 Golden Gate Avenue
San Francisco, California

MONDAY, AUGUST 10

Robert A. Jones, *Chairman*

8:30 *Welcome to California* . . . . . . Delmar Vail
District Manager, Folsom

8:35 *Introduction to Conference* . . . Irving Senzel
Assistant Director, Legislation & Plans

8:45 *Planning for Whom?* . . . . . . John Mattoon
Chief, Office of Information

MONDAY THEME – THE PLANNING TEAM

9:00 *State Director* . . . . Russell Penny
State Director, California

9:20 *Comment* . . . . Dan Baker
State Director, Wyoming

9:40 *Coffee Break*

10:00 *State Director's Planning Team*
Organization & Function . . Bob Cummins
Operation & Procedures . . . Jesse Lowe
Comment . . . Russell Penny & Dan Baker
Discussion

11:30 *Lunch*

1:00 *Planning Documents* – Their function & use at State & District levels
(1) *Economic Profile* . . . . . . Jim Munger
(2) *Interagency Plans & Impact Studies* Eugene Peterson
(3) *District Management Profile & District Land Use Guide* . . . Frank Edwards
(4) *Unit Resource Analysis & Management Framework Plans*
Activity Specialists Point of View Clair Whitlock
Manager's Point of View Dick Thompson
(5) *Activity Plan* . . . . Bill Mathews
(6) *Program Planning*
Long Range . . . . Bob Jones
Program & Budget Formulation Paul Vetterick

Discussion

4:30 *Adjourn*

TUESDAY, AUGUST 11

Ronald D. Hofman, *Chairman*

TUESDAY THEME – THE FUTURE

8:00 *Comments on Day's Agenda* . . . Ron Hofman

8:15 *The Cauldron*
Harold Tysk, Paul Gigtrup, & Clair Whitlock

9:00 *Coffee Break*

9:30 *Challenge of the Future* . . . . Michael Frome
Comment
Discussion

10:45 *Workshop (scenarios)* . . . . . . Ron Hofman

12:00 *Lunch*

1:00 *How to Think About the Future & Discussion of Scenarios* . . . . Ron Hofman

2:00 *Information Sources & Techniques*
Herman Ruth

3:00 *Coffee Break*

3:30 *Future Role of BLM* . . . . . . Irving Senzel
Michael Frome

4:00 *Discussion*

4:30 *Adjourn*

WEDNESDAY MORNING SESSION, AUGUST 12

California State Office Representative, *Chairman*

WEDNESDAY THEME – AN EXAMPLE

This day will be devoted to reviewing Association of Bay Area Governments planning program and procedures

Detailed schedule will be announced at conference

THURSDAY, AUGUST 13

Nyles Humphrey, *Chairman*

THURSDAY THEME – THE PLANNING SYSTEM-- AN EVALUATION

8:30 *Progress Report* – Each state office planning coordinator will briefly report Fiscal Year 1970 progress, major problems, attitude development, or other items of significance.

Discussion

10:00 *Coffee Break*

10:20 *Evaluation Report – Findings in Four Districts*
Nyles Humphrey & Euel Davis

Discussion

11:30 *Lunch*

1:00 *System Procedures Evaluation Presentations*
Overview – Robert H. Twiss

1602 Basic Guidance
Tom Rodda, Wyoming

1603 Supplemental Guidance *(excluding District Land Use Guide)*
Kenneth Matheson, Utah

1604 Initial Analysis
Gene Herrin, Arizona

1604 District Management Profile & District Land Use Guide
Don Geary, New Mexico

1605 Unit Resource Analysis
Dick Johnson, Colorado &
Jack Clifford, Montana

1606 Economic Profile
Ed Frandsen, California

1608 Management Framework Plan
Ken Reinert, Nevada &
John Evans, Oregon

Public Participation
John Gregg, Colorado

System Management
Ernie Kemmis, Montana

FRIDAY, AUGUST 14

Bill Mebus, *Chairman*

FRIDAY THEME – PLANNING PROGRAM OUTLOOK

8:30 *Planning System Procedure Improvement* – Continuation of Thursday's discussion as needed, ending with a statement by Irving Senzel, Assistant Director, Legislation and Plans summarizing nature and magnitude of Manual improvement that seems feasible in Fiscal Year 1971 . . . . Nyles Humphrey

9:15 *Fiscal Year 1971 Operating Budget* – Discussion of approved operating budget, major accomplishment targets, and anticipated problems for Fiscal Year 1971
Nyles Humphrey

9:30 *Coffee Break*

10:00 *Fiscal Year 1972 to 1980 Outlook*

Department Inventory & Planning Issue Paper
Bob Jones

Other Federal & State Agency Outlook & Plans--What will BLM's coordination needs be?
Representitives of other Agencies

11:30 *General Outlook & Closing Remarks*
Assistant Director, Irving Senzel

12:00 *Adjourn*

INTRODUCTION TO CONFERENCE

IRVING SENZEL
ASSISTANT DIRECTOR, LEGISLATION AND PLANS

The structure and objective of this conference are a direct outgrowth of our meeting in Vail, Colorado, last year. In fact, our meeting today is one of a series of events over a long period. It represents an assembly at another plateau in a long climb up the mountain of adequate planning for the public lands.

The Bureau of Land Management was organized in 1946. The first general instruction calling for long-range plans was issued in 1948. Details were not prescribed in that call and very modest progress was made under it. However, development of planning continued. At the Bureau's first Bureau-wide field conference in Salt Lake City in January 1949, program planning was one of the major topics discussed in a series of round table meetings. Leaders of these discussions were Bob Nielson and the then Chief of the Washington Research and Analysis Division. The first fully interdisciplinary technical discussion of planning was held at Squaw Butte, Oregon, in September 1950. Among the "planning instructors" were Karl Landstrom, Mike Solan, Cecil Hase, and the same Research and Analysis Chief. In 1952, the Washington Office hired Bill Mebus, its first acquisition specifically for program planning. Bill was responsible for the Bureau's first manual release on program planning.

About 1954, the Bureau initiated its first organized annual work plans system, with detailed schedules for activities and work elements. These were developed by a system of "pick-up" design and development teams. This pooling of talents under a pressure set-up proved to have great merit and has been used for many purposes since, including the development and installation of our present system.

The design of our present system began in about 1964. It was an interdisciplinary effort all the way--eventually with a steering committee in Washington to work for agreement on concepts and a design team in Denver for working out the details. After a series of field tests of the final design and procedures, we had a wrap-up evaluation in Denver in the spring of 1969. The concensus of the group was "go" and the system was installed July 1, 1969.

The 1969 Vail meeting was planned first as an interagency planning meeting. After the Director made the decision to install the new planning system, the Vail agenda was transformed into a general planning session drawing together people from the different levels of organization, from line and staff, from different specialities, and from a variety of agencies. This was the result of a decision to test the planning system in a full forum. After all, the Denver evaluation was made by people closely connected with the development of the system although the connection of some was more or less reluctant.

That was a hard-working conference, even for the invited guests.

As for the planning system, my concluding remarks contained the following:

> "Without exception, the remarks seemed to point to the same conclusion: the system is the long-awaited, badly needed key to multiple use planning for natural resources. The reason for this: it seems generally felt that the system provides for a focal point for bringing together the myriad of factors and considerations that bear on resource management for a quality environment. It provides the procedures for applying particular considerations at the appropriate stages in the decision-making process. It seems to have the structure to handle an indefinite number of facts and the simplicity and flexibility to enable the manager to evaluate them all and to apply them to his decisions."

The group's discussions precipitated a number of important points that needed prompt follow-up:

1. The planning specialists within the Bureau were diffused throughout the Bureau's organization. Their specialities needed to be better defined and their roles recognized. These specialists had to be bound together somewhat through the development of a common understanding of both their roles and the overall goals and objectives of the Planning System as a whole. Their inputs had to be scheduled in a manner that ultimate plans would be both comprehensive and sound.

2. Organization for planning and staffing for planning had to be perfected, both for coordination and activities and for actual planning of operations.

3. Interagency relationships had to be systemized more adequately.

4. The planning system had to be implemented by orientation and training and by adequate funding.

5. The monitoring of the planning system had to be systemized to shore up weaknesses and introduce improvements.

This week will bring out some of the things we have done to follow up on the conclusions of the Vail deliberations.

This brings us to identification of the objectives of this week's events. Identification will help explain its structure.

Our major objectives for this week are:

1. We want to introduce and explore the BLM concept of the Bureau Planning Team. Under this concept, the line officer is the Planner. The planning specialists are the members of his team. We want to explore the function of this team and how it is organized, and how it can operate.

3. We want to follow-up on our pronouncement at Vail that we plan only for the future. We are going to explore how we can orient our planning team to the future and how to build up competence in assessing the probabilities of future events.

4. We want to evaluate the experience of our first year's operation of the planning system and to identify where our attention should be concentrated in the next year insofar as system development is concerned.

5. We want to try to peer into the near future insofar as funding for planning is concerned.

6. We want to get all other benefits from association of high quality experts.

The objectives of this meeting led us to limit BLM participation by and large to planning specialists. We felt we had to bring the planning system up to a higher level of competence before we could go to a meeting of people more representative of total BLM personnel. We hope that next year we will be in that position and have a meeting with more line officers and technical specialists in attendance.

PLANNING - FOR WHOM?

JOHN MATTOON
CHIEF, OFFICE OF INFORMATION

I wanted to be on the program for this conference for several reasons. The most important is the opportunity to talk about how plans and planning are viewed by the public--especially planning by the Government--or, as our younger generation would call it, the "Establishment."

The information and education activity has been directly involved in the various phases of BLM planning systems for the past three years. We have worked with the program planning staff not only from the public involvement aspects of the planning process, but, also, in helping state Bureau objectives and policies so that internally and externally major steps forward would be well received and supported. It's been rewarding to be on the team.

The terms Plans and Planning have a great many connotations. Plans and planning are used for a number of widely differing reasons. A plan can be made for a perfectly sound endeavor. Planning is done and plans are made also for intrigue and conspiracy. Plans and planning result in different reactions by the audiences to whom they are directed. They may be so well designed that acceptance is considered patriotic. In other cases, they may be viewed as a dodge to avoid an issue, decision, or position by the Federal Bureaucracy.

The terms Plans and Planning in today's general atmosphere of public unrest are words that should be used very carefully and definitely. I say this because there is evidence that Americans are becoming more suspicious of Federal planning for their military posture, their social well-being, and their economic status. This may be an oversimplified statement, but the general mood is for action--Americans want action on all fronts now! Too many plans have been made that have failed. Too many plans have been made and shelved. And, too much Federal planning has been done in a helter-skelter fashion.

Thus, as we go forward with the implementation of BLM's planning system, let's keep one thing uppermost in our minds--the title of these remarks: "Planning - For Whom?"--whom are we planning for? We are not planning for just the BLM organization. Nor are we preparing plans just to manage the resources in an orderly manner. We are planning the use, or protection, of the public lands for the people of this country. Never more in the history of America is this concept so important, because the public not only wants but expects a piece of the action.

A key point in our planning perspective that we must not lose sight of is that the people, the public--users and non-users of the public land--want to be a part of the process. In fact, they insist on having a say as to the management goals and the plans for carrying them out on the public lands. Ten years ago we might have gone through the entire planning process without any significant public concern. Today we need to "plan in the plan" for direct input from the users and owners of the public lands. It is equally important to keep the users and the general public involved in the process. I am sure Russ Penny will agree with this concept--the California Desert Study has moved ahead so effectively because of full public participation.

I cannot stress the public involvement process enough. We are all aware of plans for public land management that have run into real trouble. We have them in BLM: the Pryor Mountain wild horse program, for example, which ran into tough opposition because BLM planned a program and then went to the public with it. Our sister agencies, the Forest Service, National Park Service, and others, have had similar setbacks.

Fortunately, I have been able to observe and participate in the land use planning programs of the two largest Federal land management agencies. The Forest Service's multiple-use planning program is well underway in its first phases, if not actually accomplished. It is a highly skillful planning system with in-depth inventories and thoroughly thought-out regional and local planning assumptions and guidelines. I was, and still am concerned over one procedural aspect of the Forest Service planning approach. This is the degree of public involvement before, during, and after the plan is prepared. Any plan for the management of land or its resources that is presented to the public only as a final plan is a target. It is likely to be shot at with vigor. The BLM cannot afford to take this route. The subject of public participation in the planning process will receive continuing attention.

Now, I would like to turn to another aspect of the Bureau's planning program that can have a most positive external impression on the public we serve and can facilitate public participation. BLM land use plans should be prepared using high visibility techniques. The objectives for doing this are two-fold: First, the plans must be well prepared. The maps and other appendices that are a part of the system should be easily understood, not only by the land managers but also by the public. The ultimate goal should be a plan that the neighborhood druggist, the ranch operator, and the interested housewife can read, and, with accompanying maps, gain a reasonable understanding of what the plan is aiming to accomplish. I do not mean that all technical data and inventories must be in strict lay terms. Nor is it intended that management criteria be seventh grade level writing. What is needed are plans that are prepared so that the layman can visualize the conflicts facing the resource manager, and more important, can appreciate a process of planning that considers issues that results in decisions to resolve them. Here is where BLM has a golden opportunity to demonstrate its professional ability as planners for resources and planners for the public's welfare in relation to the consumption or non-consumption of resources.

The second objective for BLM's planning program that can have positive external effects stems from the openness of the planning procedure and the proper publicity about it. With this we can avoid the public's previously mentioned natural suspicion of Government planners.

After the plans are finalized through the public-participation process, adoption should be an occasion for appropriate publicity. Invite the public to the District Office and make a presentation of the planning system and how the plans work. The event could be an annual open house in some instances where the public can come voluntarily to see how their lands are to be managed.

Someone might say that this is a pretty dry subject area for such an event. But my guess is that you would have a large audience because people do care. The current environmental surge has interested a large segment of this country's population in land planning matters.

Thus, there is a definite public relations value to the completed land management plan. The final product of any endeavor, whether goods and services, or a plan, has a built-in advertising value, the worth of which is pretty much dependent upon its quality. Let's look at the advertising value ingredients of a well-designed and constructed product--in this case the BLM land use management plan.

The Foundation - A Sound Plan. No one yet ever made a silk purse out of a sow's ear for very long. The BLM planning system has been tested and sound plans should result from it. If they're not sound, no amount of I&E effort will make them popular or even acceptable to our publics.

The Appearance - An Attractive and Easily Understood Plan. The final product can be a professional and business-like plan for the management of an area of land. It can also be fashioned into a document that will invite interest outside of BLM. A well-written text and the tasteful use of illustrations and maps will make the plan more than just another Government document. The system provides great latitude and flexibility for you in this respect.

Bring your I&E specialist in at an early date. Be selective about what you print.

The Acceptance and Support - Selling the Plan. If the first two steps are carried out properly, the plan will sell itself. The plan can be the reference source for community or county officials and for the District or Area office. It will be a plan that is understood and respected by the users and the public. Perhaps in this day and age it is more important that the plan be one that can be trusted.

The plans should be a focal point of the office--maps in the plan should be a rallying point for public inquiry and discussion about BLM activities and programs. This will take time, but I urge you to place emphasis on the availability and high exposure aspects of BLM's land-use plans. I stress this now because we are going to have to do it.

Earlier in my remarks I mentioned the need to "plan in the plan" for input from the public. Who's job is it to make this part of the plan? That responsibility lies with the planner, in most cases the District Manager. But as with most every other phase of planning, the planner needs expert advice and assistance. In view of the importance of this aspect of the plan, I believe we must consider the Assistant to the State Director as part of the State Director's planning team, the same as I am considered a member of the Director's planning team. The new organizational concepts for the State Offices will facilitate the participation of I&E in the planning process. Obviously, District Managers who have I&E personnel on their staffs will do well to incorporate them intimately in the planning effort.

Finally, let me suggest what the future might hold for the BLM planning systems and the land-use plans themselves as they relate to the public we serve. I believe we are headed in the right direction in our planning approach. Further, I consider the public participation aspect of the system to be the very ingredient we need for eventual success. Let's make our plans truly plans for the people. This is an opportunity that few Government agencies have taken advantage of. We are faced with a condition of our times that cannot safely be ignored. The public is at our side and looking over our shoulder.

Think about this: The Federal bureau that plans for and with the people today will be the Federal bureau that will be the most successful in achieving its mission in the future.

STATE DIRECTOR'S ROLE IN PLANNING

J. R. PENNY
STATE DIRECTOR, CALIFORNIA

When speaking of the State Director's role in planning we must think of him as the planning leader for all activities under his direction. Planning is largely responsible for the quality and efficiency of operations. It brings about the changes which, after all, are the measurement of leadership.

Obviously, I am speaking of planning in the broadest sense, but certainly the Bureau has no program that should prove to be more vital to a State Director's operations than its Land Use Planning System. It is a good system. I think without question that it will develop to be a landmark in the natural resource field.

In exercising his role as a planner, the State Director must apply his managerial skills in the same manner and to the same degree as he does other major and difficult programs. He must sell this program to himself, to his employees, to other Bureau offices, and to the many publics.

To sell himself...to believe...he must understand the system--how it operates and what it can do for his operations. In believing, he should become enthusiastic. With knowledge and enthusiasm he should be able to establish one of the primary prerequisites of a good organization -- a climate favorable for the growth of the program. Such a climate will be characterized by open and free-flowing lines of communications--lines that flow in all directions interrelating ideas and aims through the many pyramidal apexes of the organization and finally up to the State Director.

There are a number of ways to develop a proper attitude towards planning and each State Director would probably use the approach particularly suited to him and his management situation. But I will illustrate how California set and is still setting the stage for acceptance of the planning system--not only to BLM people, but the many publics that will be associated with the system.

We sought and were assigned the responsibility of testing the proposed system in two of our Districts as part of a pilot effort. The State staff and employees in the Districts were instructed to try the new planning procedures and attempt to improve on them. Through constant contact with the employees involved in testing the system I became familiar with the value and practical application of the system components. The results of the testing were presented to me for review and evaluation. It was then that I developed an insight as to which procedures and techniques were good and what changes must be made to make the system workable. The employees who worked on the pilot effort had a part in developing my sensitivity to the need for a system that would be useful. Through a dialogue with the employees involved in the pilot effort, I also conveyed my planning philosophy--that the system must have flexibility, simplicity, and the capacity to change to meet the needs of the people.

We made presentations of the planning system format on several occasions to secure comments on its applicability and to improve intergovernmental relations between the Bureau and outside groups.

One presentation was to an Off-Road Vehicle Advisory group which was formed within the State to help resolve certain land use problems. Here the planning system was presented as an approach for identifying alternative solutions to the problems and for evaluating the impact of off-road vehicle use on the resources.

The value of the system for identifying and resolving particular resource problems resulted in the Off-Road Advisory Group recommending that BLM proceed to develop an interim plan for our Panoche Hills area using the planning system approach.

On another occasion the planning system was presented to the State Advisory Board so we could impart an understanding of the complexity of our land use and management problems and thereby improve relations with the State and local governments and private interest groups the Board represents. Their reaction to the Bureau approach to planning was excellent.

In an effort to gain cooperative support from State, local and other Federal agencies and private interests, one of the pilot District efforts was presented at a public meeting to promote the California Desert Study. This gave a broader group of people an insight to our planning problems and stimulated their interest in identifying ways to cooperate with the BLM in a large-scale planning effort.

In an attempt to resolve differences of opinion as to resource use conclusions reached in a water project impact study, the Bureau Planning System was presented to the Bureau of Reclamation to explain our planning process. This resulted in a far better understanding by Reclamation of the scope of our programs and the complex actions the Bureau must to through in making management decisions.

During the course of these various conferences and presentations, a very marked spin-off benefit was derived in establishing the climate for planning with our own Bureau people. Both State staff and District personnel were involved in the meetings and were able to perceive the philosophy, position, views, and continuing interest of the State Director toward the planning process. Feedback of the interest of the Districts toward the planning process has been demonstrated by requests of other offices not involved in the pilot effort to present their newly completed framework plans to the State Director and staff for review and evaluation.

There is no doubt in my mind that our people are aware that I fully and actively support the planning process in managing our resource operations.

With regard to operations of the system, the State Director makes himself available to appropriate State and District staffs in analyzing special actions or problems of either an unusual nature of those having state-wide implications. By maintaining open channels of communications, the State Director can remain sensitive to planning problems which may have Bureau-wide implications so that he may advise the Washington Office accordingly for further counsel or action. Through this process, which is germane to all good management principles, State policy, guidance, and directives are initiated and implemented or modified, as appropriate. The planning team has a responsibility for the coordination and overview of the planning system progress. However, when interoffice conflicts between State division chiefs and/or District Managers occur which the Planning Officer cannot resolve, the matter is brought before the State Director for further analysis and resolution. Any other problems related to progress and implementing the system at the District level which cannot be handled by the planning team are brought to the attention of the State Director so that he may actively exercise his prerogative. This may occur when program imbalances arise which need State Director input.

In closing, I can only reiterate that in order for State Directors to become proficient as land and resource managers, they must sell themselves on sound planning, impart this knowledge to their employees, and actively participate in using the system. The method used for accomplishing these goals is the challenge we all face.

THE STATE DIRECTOR'S ROLE IN PLANNING, OR THE STATE DIRECTOR AS A PLANNER

OUTLINE OF REMARKS

DANIEL P. BAKER
STATE DIRECTOR, WYOMING

The State Director must ---

1. Establish favorable organizational climate for planning.

SD must understand the planning "process" (in terms of the professional concepts) as well as the BLM planning "system" (as the organization's methodology).

As Penny noted--with understanding comes confidence in the system. SD must sell himself before he can motivate others and generate enthusiasm.

SD must get involved in the activity. He should demand the products and results of planning and promote more analytical effort.

SD must support the planning staff and use it in the formulation of management decisions.

2. Build an organizational capability for planning and analysis.

He must develop an adequate staff with diverse skills.

He must establish the responsibilities of the planning staff, and clarify its relationship to other organizational units relative to activities such as I&E, current year programming, etc.

3. Promote communication between the planning staff and others both within and outside the Bureau.

An increased awareness of the importance of planning to further the acceptance and support of the activity must be encouraged.

SD must insure that the planning staff is in the mainstream of communications and guard against isolating it from other organizational elements.

4. Improve sensitivity to resource needs and public demands.

The Bureau's "traditional" resource management role is changing. SD must be alert to new forces, attitudes and values.

SD must encourage increased sensitivity to our changing management environment.

5. Provide guidance and direction for planning.

Know resource, public and organizational needs and capabilities and establish or clarify program goals consistent with national aims and Bureau objectives.

Establish or interpret program advices to guide Districts in accommodating local requirements or regional needs.

6. Enhance coordination with other planning activities.

SD must insure that Bureau plans relate to the plans of others. As Penny observed--other agencies are developing plans which impact on public lands and resources and we must not relinquish our responsibilities.

We must relate more adequately to Interagency River Basin planning activities and the plans of other Federal agencies such as Forest Service, SCS, Reclamation, and also State and local agencies.

7. Monitor the "action program" and planning system implementation. SD must stay on top of the situation including--

Training of personnel in all aspects of planning system concepts and procedures.

Planning activity as conducted in the Districts.

Progress and results. Review MFP decisions.

Coordination relative to other planning activities--internal and external.

Public participation and exposure.

8. Analyze and evaluate planning effort and adjust activities and operations when and where necessary.

This includes revision of work priorities, allocation of funds and manpower, etc.

Must be alert to opportunities for improvement in operations and more effective management.

9. Use the products and results of planning in program development and management.

This is the real test ---

The plans must have utility.

The plans must be used in decision making.

The plans must assist in achieving proper program balance, allocation of funds and manpower, identification or priorities, etc.

10. Demand imaginative, creative, sensitive, responsible management and capable or competent performance.

THE STATE DIRECTOR'S PLANNING TEAM

ORGANIZATION AND FUNCTION

ROBERT V. CUMMINS
BUREAU SYSTEMS COORDINATOR - DSC

Before we begin to talk about how the planning function should operate at the State level, let's examine this planning beast.

In an article in Harvard Business Review in 1964, David W. Ewing said the beast is a dinosaur.

> "The dinosaur was strong in the fangs and haunches, and because of his height he could see far around; but he had practically no brain for judging what he should be doing.
> ....planning is strong in methodology
> ....but it is short in knowledge about desirable strategies and goals."

My thesis for today is simply this:

> A District Manager can faithfully, even meticulously follow the prescribed methodology of the Bureau Planning System and still come up with wrong decisions because of one missing ingredient. Without that missing ingredient he won't know the decisions are wrong, and nobody else will know it, either, until much later. The DM's missing ingredient is guidance.

All decisions are made within the framework of a value system--one which tells me or tells you that this is more important that that. Unless the DM is provided with a Bureau, or a State, value system he has only that guidance provided to him by his own personal value system or the personal value systems of the more persuasive members of his staff or other advisors.

Let's have an example:

> Let's say we've got an isolated 80 acre tract 12 miles out from a city that increased from 35,000 to 110,000 between 1960 and 1970. The tract is surrounded by irrigated farmland, but it's above the ditchline. It's rolling ground with thin, rocky soil, You've all seen the kind I'm describing.
>
> What should the DM do about that piece of ground?

> Offer it for sale?
>
> Try to work up an exchange?
>
> Just ignore it?
>
> Depending upon what kind of a guy he is, unless he has some particular guidance which applies, he might do any one of the things I mentioned.
>
> But what if he had guidance which tells him: "Don't dispose of Public Land in the growth path of communities if the land represents a significant proportion of area available for future urban open space?"

To my way of thinking, this is the important role of the planning and program development staff envisioned by the State Office Reorganization task force:

> To research. To discern trends and to interpret their meaning. To speculate about present and future behavior of people, and to detect, if they can, the shifts in value systems of the people who really own the land entrusted to us.
>
> To advise the State Director regarding the significance of what they learn in the process. To translate his decisions as to what is more important than something else into guidance for the day-to-day decision makers on the ground.
>
> To follow up, in a variety of ways, to insure that the value system employed is equal to the task, is adequately understood, and is being properly applied in decision making.

Unlike the dinosaur, BLM does have the brains for judging what we should be doing. It's just that we must begin using them.

The dinosaur disappeared when he could not adapt to change. The first step in adapting to change is to be able to discern *what* is changing, and *how* it is changing.

Our society, its value systems, our economy -- you name it, and it's changing. Most relevant to us is the change in values now appearing in the people-resources relationship. More people want clear, clean water to play on than need it for irrigation. Trees may be more valuable to walk under, or sit under, than as construction materials.

We can learn to discern change, to interpret its meaning, and to adapt our decision behavior. *We* don't need to disappear.

Let's look a little closer at this State Office Planning and Programming staff.

I have said it should research -- it should discern trends and interpret their meaning. Ultimately the results of observation and analysis would form the basis for guidance in decision making. This is the substantive role I envision. Let me briefly tell you why.

The name of the game is land use. But land has many uses. As has been said of beauty, potential land use is in the eye of the beholder. He sees those potential uses best which he understands best. Guidance is the sure-fire way of expanding or refocusing his understanding about potential land use -- not for its own, intrinsic sake, but in relation to a broad spectrum of land needs.

This factor of land needs is the key. If one need is greater than another, and a piece of land may satisfy either, but not both, the decision is clear enough. But how do we know what the real needs are, and how can we tell which is the really greater need?

I mentioned earlier that things are changing. Time was when we could, ourselves, assess needs and make decisions, unaided. So could just about everybody else. Thankfully, that day is either going or already gone. Relatively unilateral big decisions like Bridge Canyon Dam or the Miami Jetport are entirely in the past, and the smaller ones are going in the same direction.

What I am leading up to is the point that many, many more land use needs are being described for us in terms of national goals and priorities. Some are specific -- new cities; wild rivers. Some are very broad -- the thrust toward regional land planning.

In whatever form it comes to us, this kind of guidance in broad terms needs to be translated into actionable form in the more specific context of the lands we administer.

It is a role envisioned for the State staff to first make that translation, to then guide the development of programs in that direction, and to justify program and budget proposals by demonstrating that they further the broad national goals articulated for us. In other words, land use decisions will stick and prosper only if they're relevant.

That is not an easy or simplistic task. National goals are not formulae which work identically everywhere. They are successfully applied only if tailored judiciously to the conditions that pertain where they are to be applied. Economic, social, demographic and other conditions vary greatly and must affect the way in which ends are to be achieved. If we cannot rather accurately determine these conditions, now and for some ways into the future, we will not be very successful in making land use decisions that are consistent with national goals.

That is what I mean when I say that the staff must research -- must determine trends. They must understand the ends to be achieved as they relate to the situation that exists in and around the area of their stewardship.

In short, they must understand the broad real demands for present and future land use to fulfill both national and regional needs. A subpart of the demand picture is the need to understand the ranking in importance of all the needs that are evident. Inevitably, some needs will be necessarily sacrificed to satisfy others. These choices are either going to be right, or heavy prices will be paid by our society in the future.

I've talked about demand -- now let me spend a few minutes on supply, and the difference between them. If what I'm about to say sounds a little like preaching, it's because it's intentional.

Yes, I know. Most of the preaching in this world is addressed to the wrong people -- the elect who sit in the congregations, not the sinner who never does. In the same way, you don't need preaching at -- it's those other sinners.

The sin I'm preaching against is the sin of confusion -- confusion of supply and demand. So as to make you less uncomfortable about your little sins, I'll use the trick of the country preacher. I'll talk about those big sinners that aren't here.

Let me conjure into your minds the vision of a lovely canyon or valley through which runs a lively river. Downstream a ways the area closes in to form the perfect site for a dam. That potential damsite is supply. It would be a sinful waste not to build a dam upon it. It's very existence cries for the erection of the dam. It demands a dam, and the dam is built. The supply has created the demand. The one has been confused with the other.

I leave it to your powers of observation of the current environmental crisis to decide whether the supply of a potential damsite has always been used in satisfaction of the right demand.

Now we don't commit big, glaring sins -- or do we? If a piece of ground seems to cry out for the development of a campground, do we succumb? Campgrounds are now "in" -- they're acceptable -- they're the thing. But dams once were, too!

This State staff is going to have to be always on guard not to commit the sin of confusing supply with demand. They are going to have to find ways of identifying real and potential demand that are at the very least equal to our ability to identify real and potential supply. And I'm talking clear across the board. The fact that a piece of ground seems naturally to supply a known need of any kind is not reason enough for us to rush toward a happy marriage of the two. Let's take a good look around, first. There may be other more suitable partners for this marriage.

It follows, it seems to me, that if we are going to act as a wise broker in the marriage market we need to really know our clients, both supply and demand. We tend to think of supply as being very localized -- a discrete piece of ground. We therefore tend to think of only those demands that we can relate to it. But there is an aggregate of supply, and an aggregate of demand.

Literally millions of visitor days are enjoyed in the Lower Colorado River area by people from hundreds of miles away -- the Los Angeles area, yes, but from the snowy, colder areas of Montana, Idaho, the Dakotas, too, in the winter time. An aggregate of demand, all concentrated upon a limited supply -- the river. That's what one is forced to conclude from casual observations.

However, carefully studied, it is quite clear that many of those people are not interested in the river, but in the desert and in the sun. They, now, can enjoy the real supply they seek only because the facilities and utilities they require are on the river.

There is an aggregate of supply throughout a much larger area to satisfy the aggregate demand, if we would only think in terms of aggregations and not in terms of sites or localities.

So it is apparent to me that decisions on land use in a planning unit cannot be made without full consideration of the importance of the resources there as parts of larger aggregations of similar supplies, and of the aggregations of their related demands.

The State staff must deal in these aggregations, in some instances over a very large area extending beyond State lines, just in order to knowledgably relate a specific resource supply to its present and potential real demands. Obviously, too, BLM doesn't possess the total supply of any resource, so aggregations of supply will all need to give full recognition to the supplies that exist in the hands of others -- other Federal lands and resources, State, local and private.

When I follow this line of thought, it becomes apparent to me that the second generation, or third generation planning system will contain refinements and sophistication beyond anything that has been articulated up to now. I suspect that this kind of progress is only going to come from the State staffs as they identify and re-identify weaknesses in the tools they are using, and ways to improve them.

In the meantime there is the more immediate task. The present planning system must be operated and evaluated. Much, much training of State and District people is still needed. Better implementation and top grade evaluations are another part of the work of this staff.

Even after we learn how to make the right land-use decisions, there is still the question of when to implement them. Sequences and priorities must be determined within a time frame which lends itself to more stability than the present annual budget time frame -- perhaps five or more years ahead.

As the task force viewed it, this system of multi-year program development fits together functionally and requires the same skills.

To summarize, and to put this envisioned staff into its whole organizational frame:

> It would interpret such national guidance as it receives, and relate it to the regional setting, and the State setting.
>
> It would develop guidance for use throughout the State. This guidance would provide a realistic picture of needs and demands to which the District Manager could match his share of supplies in making his land use decisions.
>
> It would evaluate the process, and it would improve both the process and its actual performance.
>
> It would provide advice on sequence and priority of work to be done, and would provide the rationale and justification for those programs decided upon.

It would have related roles, such as:

> Review all annual program proposals and proposals for program modifications to insure their consistency with multi-year program direction, sequences and priorities.
>
> Maintain a constant awareness of outside events of any relevance to decisions already made, and recommend changes if needed.
>
> Propose changes in policies or laws whenever they, or their interpretation, interfere with the sound satisfaction of goals.
>
> Participate in joint planning with others.

Aid in the education of the publics, and enlist their participation in land-use decisions.

And, in between, they can fight with the classification people for the grades they deserve.

CHALLENGE OF THE FUTURE

MICHAEL FROME
CONSERVATION EDITOR, FIELD AND STREAM

A speaker never knows what to expect from an introduction. I appreciate the kind words from my friend, John Mattoon, although he forgot to mention that I have a relative working with the BLM this summer. My boy has been up in Alaska fighting fires and I'm very proud of that association.

I recall some interesting introductions to which I've been subjected recently. I was in Wyoming and was introduced as the "Conservation Watchdog in Washington," which was very gratifying. Then I had an experience at the Smithsonian Institution, when the Chairman said "This is Mike Frome, who is a militant activist conservationist, but really a secret member of the establishment."

The point that I'd like to make is that I'm not trying to tear down the establishment, although it may at times seem that way. I am trying to save the establishment from itself. This course of action and way of life are predicated on placing principle above expedience, of never letting down one's constituents. I have constituents, too, just like someone who's elected to public office. They used to be the little old ladies in tennis shoes, as John mentioned.

I concocted that idea several years ago when I was on a program of the Society of American Foresters in Washington with about five other people. I looked around and there was Milton Pearl representing the Public Land Law Review Commission, someone representing the National Association of Counties, a Vice President of Kennecott Copper, and the President of the SAF and I asked myself, "Who the heck do you represent?" When my turn came, I said that if I had to represent somebody, it would be the little old ladies in tennis shoes.

I don't represent them alone anymore. Now that I'm with Field and Stream, I represent another body called the "Little People." These little people write to me all the time, hundreds of letters, and they're all over America, and some of them aren't so little after all. I mean they can even spell. But the ideas they produce are my inspiration and they are watching all the time, demanding the best that I can give. I won't say excellence because that's for somebody else to judge. But I know that I cannot let down my constituents.

The important point in placing principle first and holding a firm line is that it's very tough to make an exception once and get by with it. An exception, like a zoning variance, is like a slight case of pregnancy. Or as the film we've just seen indicated, Do you want to take death in slow doses or all at once? That's what we're going to get if we don't stop allowing private profiteers to dump their waste in the public air and in the public water. Also, by holding a firm line we give the power structure of this nation something to shoot for. If we say to them, or if I say to you in BLM, We'll be satisfied with a 40 percent clean-up somebody will say, Well, how about just 20 percent? But if the little people say, We want 100 percent clean-up, this is going to give you something to shoot for and the power structure something to shoot for--and this is the kind of language they understand.

I am happy to come here and speak to you about planning. I'm really deeply impressed by the gathering here. It's been a great pleasure for me in Washington to work with Irving Senzel and his associates and with the entire leadership of the Bureau of Land Management. They've all been most cooperative and helpful and I think the men in the ranks of the Bureau of Land Management can be extremely proud of the leadership.

Of course, there are different views of planning. As I was thinking last week of what planning means to me, I was reviewing the transcript of the Senate appropriations hearings on the Interior Department budget. I came across this colloquy between your Director and the Chairman of the Appropriations Subcommittee:

> Mr. Rasmussen speaking--On the Lower Colorado, Mr. Chairman, we only had two men to work last year trying to clean up the areas and keep them clean.
>
> Senator Bible speaking--You may be under-manned.
>
> Mr. Rasmussen--It is a tremendous program to work on.
>
> Senator Bible--Of course you could probably use some of the planners sitting in the BLM offices. Put them on clean-up and they could work well. At least some of the planners you have in my State could.

So much for Senator Bible's views of planners. My own is that you have the opportunity and the responsibility for going beyond pragmatic problem solving. You have the opportunity of looking ahead, not to the year 1980 or 2000, but 2500 and 3000. This is the kind of a world that we idealists like to envision and like to plan for.

Planners should understand the state of the world today. People involved in resource management and planning thereof, should understand that a revolution is going on in the world today--a revolution of thought that is shaking all of our institutions. It is only a beginning, friends; from now on the tempo is going to accelerate.

What are the institutions that are being shaken up by the revolution? The church, education, politics, medicine, law, industry, literature, the professions, you name it. In terms of writing, I think everybody who makes a living as a writer today, is scratching his head and asking himself, "What am I really writing about? Is what I am doing relevant to the issues of this hour? Is what I am writing about relevant to the future?"

What are the manifestations of the revolution? The fact that the Roman Catholic Church, after all of these years, gives up the liturgy in Latin and talks in English. The fact that you find black ministers in white churches and white ministers in black churches. The fact that you hear jazz music in churches instead of old organs. The self-determination of nations all over the world. The desire of men to be free and to express their freedom individually rather than in mass. The overthrow of Speaker McCormack, after all of these years, manifesting the revolution in our Congress. The desire of the young to be heard against the old machines. The outburst for peace all over the world. The animosity toward the United States and its position in Viet Nam. President Nixon had a juicy taste of that when he embarked on the Cambodia adventure.

Who is making the change in the world today? A whole combination of forces. The young, the black, the female, the female black. I think that Shirley Chisholm is one of the most important people in this country today, because she symbolizes the woman who wants to be free and the black woman who wants to be a leader and is indeed a leader. The red, the Spanish American and the poor. These are the people who are making the changes in the world today.

I would not presume to speak for these diverse groups, but planning cannot go on without their presence and full participation and direct involvement in decision making. Secretary Hickel recognizes this and the President recognizes this, too.

I received a transcript of a press conference the Secretary held in Alaska last year when the press was baiting him. They said, "Secretary Hickel, we'd like to talk to you about some VISTA volunteers stirring up the natives and telling them about their rights. What do you think of that?"

And the Secretary responded, "Well, if they volunteered to help these natives and they're helping them to understand their rights as free citizens in a democracy, I think they did a good job."

The Secretary said, "You see the problem that we have is that the native people have not been involved in the decision making process and this accounts for the inadequacy for many years of the Bureau of

Indian Affairs. Down in Arizona we have some native people on the School Board. True, they only have a second grade education, but they understand the need of education of their people and thus are able to make a highly significant contribution." And as you noticed, the President's announcement regarding the new Indian policy is based on the involvement and full participation of the native people in decision making dealing with their affairs.

What is it that all of these forces are demanding? They demand new standards of life in America and rejection of old standards. They want clear air and clean skies and flowers and trees and plants and growing things--this is the environment they want. They want idealism above materialism. They want love above hate, peace above war. They want glorification of individualism above glorification of technology and the mass.

How do they express themselves and their demands? Sometimes inside the system, sometimes outside the system. I think we see a new political awakening on the part of the poor, the black, the young, the female, the red, and the Spanish American. Caesar Chavez is like a political symbol, isn't he? Shirley Chisholm is a political symbol. The Alaska natives use their voting block and will use it more.

Political candidates are running on environmental tickets all over the country and we're going to see a lot more of that. We have people running on black power tickets. They work within the system through the courts as well. We're going to see a tremendous number of law suits involving whatever it is these groups consider the environment. Even what we consider the environment is now in the courts in the terms of the National Environmental Policy Act of 1969.

So people operate through the courts, they operate through the political structure, from which the common man has been separated all this time. The political structure hasn't belonged to the poor, or the black, or the red. It belonged to the economic power structure of our society; you know that out here in the West--it's as plain as can be. But I think that day is changing.

And they operate outside the system--through violence as a means of drawing attention to the desperate nature of their problem--the failure to recognize human needs.

I daresay that if the President hadn't taken the lead as he appears to be taking, that if we don't accelerate the tempo of environmental responsibility, the people are going to do very serious things. I get letters along these lines. People write to me from Appalachia and say that they're strip-mining our country, or they're knocking down the forests: "These outsiders who have no stake, have no root, in our land except the exploitation of the resource. They're destroying our hunting and fishing grounds. We're considering sabotage. What shall we do?"

What other recourse is there? Of course, I urge them to exercise their political rights, but the people in the South, the old mountain boys and piney woodsmen, have been using sabotage for years, expressing their desire to hunt and fish in their streams; that's why the lands are not posted by the big companies.

My readers in Field and Stream here may recall I had a little set-to with a large pulp and paper company in Tennessee, Bowaters Southern, which spread a lot of poison around Tennessee in their holdings and in their neighbors' holdings and killed fish and game. People didn't like it and they set fires and Bowaters stopped spreading poison.

I hope we don't have to go through such expressions of desperation. I hope that the Federal structure and the State structures and the professional groups will respond to the demand and the desire of the people to clean up and protect the environment.

In my own county in Virginia, we had a situation where the people wanted a park in an area called the "Burling tract." The people voted to tax themselves to pick up the Burling tract, but our Board of Supervisors deferred acquisition until they realized that if they didn't order the Burling tract acquired, that young boys and girls were going to throw themselves in the paths of bulldozers and were going to burn down that woodland. So this is a very serious business.

I would like to suggest that you read a very interesting editorial in the latest issue of the Sierra Club Bulletin, (which I am sure is standard reading for all environmental planners anyway) by the Executive Director on the youth forces that are coming into the environmental picture. I think our old line organizations are being challenged, too. After all, they're mostly middle-class people who are trying to safeguard something for themselves, their own cultivated way of life. Now they find these young college kids and all the rest of them taking the center of the arena.

So where does that lead us here in planning for the future? I don't think there's any doubt that planning for the environment must come ahead of planning for economic purposes, and certainly ahead of the Gross National Product.

In order for a nation to be prosperous, it must sustain natural resources. Natural resources are the base of the wealth of nations; so history is written--for thousands of years. The nation with abundant natural resources has prospered, the nation with deteriorating land resources loses its prosperity. We have only to look at the ancient history of the nations of the Mediterranean and the Middle East.

Today we here in our country are operating on a declining resource base of air, soil, water, forests, minerals, and space. Unless we act now, this nation is on a downward course to becoming a second rate power.

Of course around my house, my son would say, "Well Father, precisely what's wrong with becoming a second rate power?" I think we ought to ask that question of ourselves, too.

Many of the scientists warn that we're headed for doom--that the human race is finished unless we act soon. I'm not so sure this is necessarily the case, but certainly we're headed for a new ecological environment unless we turn the corner to a new course very soon.

They say Lake Erie is dead. Lake Erie isn't dead, it's just that the life community is changing in Lake Erie. We have many streams all over America that were once clear. They support new forms of life. They support life that thrives on garbage. This is what the human race is facing. The first signs of it are in the outburst of crime and drugs. This is the American of tomorrow, living in congestion, living on chickens that never touch the ground--next will come cows that never touch the ground. It's not the same cow, you know that.

Or as Congressman Aspinall told my wife at a party, "We need DDT for farming, and besides, people will develop an immunity to it". My wife is normally a very quiet and reserved lady. She lost her temper and I was rather proud of her, although I was in another part of the hall at the time.

But these are strange kinds of Americans that we're going to breed, in an atmosphere of filth, immorality, degradation, environmental emptiness, and a cluttered planet.

The BLM has come out of nowhere in the last two or three years. From the lowest of the low in the Federal structure, or in the resource structure--though of course, we could always point to $400 million dollars worth of income from the offshore leasing--to leadership and progress and imagination and creativity, as the film so ably demonstrated. But that you had better not rest on your laurels because we need more, better and faster. The need is urgent and the people are impatient. Now is your chance to take the ball and run with it, if you have the courage to do so.

The statement from President Nixon on environmental quality gives you the go-ahead and the challenge; I hope you all get a copy of it and read the report through.

Everybody in this country with any authority has been scratching his head and wondering, "Where do I fit in, what do I do next in this environmental crisis?"

I have a speech here by Dr. William T. Pecora, the Director of the U.S. Geological Survey, who perhaps has not always been regarded as a leader in the environmental crusade; I say that without harshness because the position and the mission of his agency over the years has been to to find resources for development, or exploitation, as they should more properly call it. But he made a speech recently about a new epoch that is developing in American science.

"A mineral resource should not be developed unless it is rich enough to support proper restoration or reutilization of the land," he said. I personally don't think it should be developed unless it is determined to have greater value than other resources in the same area." A major pipeline traversing Alaska some 800 miles should not be constructed without added safeguards to protect the natural environment. Off-shore drilling for petroleum should not be endorsed without the added cost of providing added safeguards against pollution." I'm not even sure we should do any off-shore drilling of petroleum. Pertroleum from start to finish is one of the great question marks that we environmentalists must answer.

It causes pollution at the point of origin. It causes pollution through the remainder of its existence and use by us. Why don't we ask the basic question--not whether off-shore drilling should be endorsed with added cost of providing added safeguards--but whether off-shore drilling should be endorsed at all.

"Cities and industries should not use the water available from its natural sources without factoring in the cost of returning the water to a useable state," Dr. Pecora continued. "The smokestacks of our refineries and energy plants must not use materials that put unwanted matter into air."

So I say, good for Bill Pecora; this indicates the shift in thinking in the industrial and scientific communities, indicating that industry will give us anything we want, if we make it explicit to them what we desire and what we detest.

So I say to you, listen to the people and learn from the people. Theodore Roosevelt and Gifford Pinchot never feared a fight. They took the issues to the people. They provoked crises instead of waiting for crises to overcome them.

Ferdinand Silcox, when he became Chief of the Forest Service in 1933, warned his colleagues they must keep open the channels by which citizens can see and judge decisions, actions, prophecies and their effects. "Then and not until then," he emphasized, "can you and I and all of us honestly say we are conducting a Federal agency on a truly democratic basis with people in communities having an actual voice, not merely a gesture in vital questions of policy and practice that affect them."

Or as Winston Churchill's father told him, "Trust the people."

I have here, getting back to planning and my constituents out there, a letter from a citizen, obviously a man of some schooling, in Montana.

He wrote the President, as a lot of people have. In fact, so many have written the President that the White House said that outside of Viet Nam they get more mail on pollution or environment, or whatever you call it, than any other subject.

This is the outcry of the silent majority, and although I'm not a Republican nor Democrat, I'm proud that our President has had the good sense to evoke the desires of the people.

But let me read to you two or three or four paragraphs from my inspiration and constituent in Montana:

"The warning signs are everywhere that we are already overpopulated and therefore not maintaining a suitable environment for mankind. Until population can be brought under control it must be top priority for our government.

"It would be a mistake if the work of the Council on Environmental Quality was limited to air and water pollution and neglected outdoor space for recreational needs. The mental health of mankind is just as important as the physical health if we are to meet the challenges of survival before us. Man has been a hunter for thousands of years with plenty of room. There is no guarantee he can survive if he loses this room. Careful planning and action now can provide the outdoor space required, the recreational opportunities for hunting, fishing, camping, and hiking, the watersheds to supply clean water resources, and the maintenance of ecological systems until we at least know the effect of destroying links in these chains.

"As an individual who has had the opportunity of spending a great deal of time in the out of doors, it is obvious that we must do the following: (1) bring population under control, and (2) set aside perhaps as much as one-half of the nation as wilderness areas, national parks and multiple use areas. The emphasis should be in the respective order above."

I agree with him completely. This is what we should be setting our sights for. Protecting the health and well-being of our nation through the wise use of our resources and the harnessing of technology to serve the needs of the people, and not the other way around.

This man spoke of wilderness and so did the President. August 5, the President sent a message to the Congress of the United States transmitting the sixth annual report on the status of the National Wilderness Preservation System.

"I am convinced," he said, "that in the past we have moved too slowly in the Executive and Legislative branches toward completion of our National Wilderness System. I have asked the agencies to review their needs for additional resources and will ask Congress for any additional funding which may be needed to make this new wilderness effort possible."

Of course, the agencies don't need additional funding to make our wilderness available; they need to apply themselves to the letter and spirit of the Wilderness Law of 1964, which they are not doing. People are going to be disturbed about that. We demand that the Park Service direct itself to this issue, that the Forest Service reserve the defacto areas until they can be reviewed rather than proceeding with cutting as dictated by the logging interests.

The President said further, "I look forward to the next annual report on the wilderness system, confident that I will be able to report substantial and encouraging progress on both the study and the enactment of wilderness proposals. I cannot stress too strongly my conviction that we must vigorously push ahead to preserve for future generations the opportunity to enjoy the singular encounter with nature which only wilderness can provide."

As an environmentalist, if I may so refer to myself, I feel the greatest thing that I can do for the next generation and the generation after that is to leave a body of wilderness intact. One generation hence, others may look back and think how little we of this age knew about soils, plants, animals, air, and life itself. One of the key roles of this generation may well be to insure the availability of resources to the researchers of tomorrow.

You in the BLM have the authority to establish wilderness. You haven't done it enough and I hope that it's part of your planning to consider directing yourself to this issue rather than to the kind of unrestricted mass desecration which we saw in the film.

I hope you read the PLLRC report because it has a great deal to do with what you're talking about here. Of course it has its shortcomings. In my judgement it lacks unity and cohesion, ambiguities abound, it speaks in continually changing voices, but still it has many fine sections and recommendations which relate to planning, which I hope that we can pursue in establishing the policies of the land.

For example, it recommends that the government undertake to enhance and maintain a high quality environment on and off public lands. And after all, how can we separate them any longer. Its all the same air, the same water, the same soil. Perhaps the most essential of all is the Commission's idea for public participation in land use planning, including a provision for mandatory hearings on public land projects.

The challenge before the people is to find out the useful and desirable features of the report and to build on them. In an age when furnishing timber is only one use of the public forests, and furnishing forage is only use of the public range, I hope we can see an internal reorganization of public land management agencies designed to bring in ecologists, biologists, landscape architects, and trained recreation specialists into the decision making positions in the hierachy.

Contrary to the PLLRC report, the budgets of these agencies must no longer be tied to revenues earned; this is essential in the future, for the connection with revenues is the anti-environmental basis of land management.

There are several publications that I would like strongly to recommend. One is the first annual report of the Council on Environmental Quality. The second is the PLLRC report. The third is National Land Use Policy Hearings Before the Committee on Interior and Insular Affairs in the Senate. I'm sure you can obtain copies of these through your offices or by writing to your Congressmen. And another one is the Decade of the 70's; The Environmental Decade, Action Proposals for the 70's, hearings before the Subcommittee on Conservation and Natural Resources of the House Government and Operations Committee.

Also I think that you should all subject yourselves to the book, Design with Nature, by Ian McHarg, and the book, the American Aesthetic, by Nathaniel Owings. These are both $20 books, so I get them out of the library. One is better than the other, but they both have something to say.

As I am going to be on the program again this afternoon, and would like to speak more specifically on BLM projects at that time, I'm going to reach my conclusions now by endeavoring to stress that environmentalism is not a word, it's not a formula, it's not even a profession. It must be a creed, a commitment, and a conviction.

I wrote in Field and Stream in August that not one Federal agency is aggressively consecreted to giving all-out leadership to the environmental crusade. But you can make it so. For environmentalism is a personal affair. There is so much that each of us can do. No one should underestimate his own capacity for achievement of victory in issues and principles.

I hope you will search your souls and ask, "Do I really understand the issues? Am I really living my own life?"

I learn from my daughter all the time, who for reasons beyond my ken, has taken up this kind of work in our county. We talk about the young--I don't see too many young people in the room, but I'm not going to be critical on that score--I think that communion with our own young is helpful and healthful. Each one of us can do his share, everyday, in some way.

I think that if everybody who comes together and talks about the environment would say to himself, "I'm going to do something tomorrow about it, I'm going to get one other person interested," we could make a lot of progress.

I went out and made a speech in Wyoming, in which I said that we have a "humanity hungry nation." You know we're told we have to get all this uranium and all this coal and so forth because we have an energy hungry nation. I said to the folks out there in Wyoming: You know why we need this coal from Wyoming and why we have to build dams in valleys. We need the power to turn on television sets to look at TV commercials that tell us how we need detergents that pollute streams, and that last year's car is now obsolete and we need next year's car. And of course we need power up in the Pacific Northwest, in the Snake River and Hells Canyon, in order to provide power for the SST in Seattle, which poor people all over the world are crying for.

The editor of a publication called the Wyoming Rural Electric News gave me hell. He wrote, "Too many outsiders, such as Mr. Frome, come to Wyoming bearing the sacred banner of preservationism and with their emotionally charged battle scars misdirect their gullible followers and add destruction to their fellow citizens livelihoods. What they are asking is that we keep Wyoming lonesome for them so that they may enjoy its solitude two weeks every year at the expense of our childrens' future. As unassailable as apple pie and motherhood, their attacks against all of the things we have been schooled to hate are popular to those who gather around them. Down with industry, down with progress, down with development of resources."

Now here's the paragraph that I would really like to read to you: "Under these statements are hidden the real issues. Somehow we must all work together to continue to provide ourselves with the blessings of technology and at the same time taking care of the earth."

If he says that, I think I reached him. We're going to reach them all. Oh, I'm not pessimistic, because the people are going to have the last word and there is a place for all.

THE PROCESSES OF CHANGE

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OUTLINE OF REMARKS

Bertrand DeJouvenel said, "We cannot affect the past, the future alone is sensitive to our actions."

Describing people like you, he also said you are "...teachers of public men in the making and advisors to public men in actuality."

How do we become sensitive to the future in our job of advising?

We:

1. Acquire foresight.

2. Become familiar with many fields.

3. Become competent in appreciating both priorities and consistencies in policies.

4. Seek to coordinate anticipations.

5. Develop a sense for detecting trouble--a survival technique.

6. Study political behavior.

7. Guess how the people will come to feel.

8. Foretell the adjustments suitable to improve the adequacy of the institutional system to cope with changing circumstances.

We must seek techniques to study change. One technique is to consider change as occurring in processes. If human decisions have any influence on the future of events, then the processes by which events occur will continue to be important.

If change is the result of processes, can we build a structure of distinct identifiable processes?

A process is any phenomenon which shows continuous change in time. Therefore, before we describe structure, perspectives in time and space are necessary.

Some of the most useful perspectives can be drawn from the researches of anthropology--the discipline that attempts to study man. Through the works of Montagu, Linton, Dart, Ardrey, etc., we can come to learn:

1. The biological inheritance of man vs other animals.

2. The nature of cultural inheritance.

3. How cultures arise and change.

4. The stages of evolution in culture and society.

5. What part human choice played vs climate, geography and environment.

It is also useful to examine world history and politics. For example, Arnold J. Toynbee's A Study of History, a work of 12 volumes which has occupied, so far, a period of 40 years. He is best known as a student of civilizations (21) and their cyclical processes of Genesis, Growth, Breakdown, and Disintegration.

Since about 1500, however, there have been new processes which have reshaped the Western world. These are still spreading the Industrial Revolution in under-developed countries. People like W. W. Rostow have advanced widely accepted theories about these processes.

Finally, it comes to the transitional status of present times. Many believe western civilization no longer has as many options as did prior civilizations. Others believe the processes of the Industrial Revolution are irreversible and must spread to all countries of the world before the process is complete. Still others are examining processes which will affect the Post-Industrial Age.

Through the work of Paul T.David, at the University of Virginia, I have come to appreciate a simple, workable structure for the processes of change. I would like to pass it along to you; some will be familiar--some not. Whether you use this one or not is unimportant but it is helpful to utilize some structure when thinking about studying and analyzing the future.

1. Growth Processes and Their Concomitants. This is taken first because it has visibily accumulative forms--growth in population, labor force, productive capital, expansion in land settlement, and increasing complexity of economic, social, and political organization. Additionally, growth processes seem most akin to normal processes of change in other living systems.

a. Economic Development in the U. S. Long term views of the American economic system emphasize both the persistent growth that has occurred and the fluctuations. Since World War II, fluctuations have been less severe.

Although the performance of the American economy in terms of income per capita has been the highest in the world, since WW II other countries have been sufficiently higher to indicate they may pull even or surpass us in the near future.

The questions pertinent for futurists are: What are the characteristics of the U.S. economy, what are the objectives, what causes depression and inflation, and what role does government play?

b. Economic Development in USSR and Communist China. As the main competitive system it is helpful to understand the main points about the planned economy of the USSR and the success of these ideas and their application in a striving country like Communist China which is also the world's oldest area of continuous large-scale civilized life.

c. Economic Development in Great Britain and India. Great Britain has undergone drastic change in economic as well as administrative scope. Lessons learned there about social welfare and adjustments may be well used in the future of the U.S.

The understanding of the economy of India is especially useful when compared with Communist China in terms of population, industry, agriculture, and political bent.

d. Population Growth and Population Problems. This is one of the most current topics of the day. Regrettably it is too often put in "shock" terms by prophets of doom. Much of what is now said was said by Thomas Mathus in his famous Essay on Population of 1798. Knowing why Mathus' predictions did not occur (at least in his time schedule) is helpful when coping with the arithmetic game that one is bombarded with today. For example, what are the technological, psychological, religious, and political aspects? At what geographic level can optimum population levels be described? What about personal and cultural criteria?

The concomitants of the growth processes include:

e. Occupation and Social Restratification. The processes of growth do not have an equal impact. The result is a shift in the occupational structure, e.g., agriculture to industry. Similarly, social stratification tends to follow occupational stratification. Economic, occupational, geographic, and social forms of mobility cause psychological and social problems, some of which are reflected in the national concern for automation, poverty, and civil rights.

f. Urbanization. Cities began as centers of religion and government. In the western world cities are the result of the shift from agriculture to industry. Energy resources and transportation affect the pattern. However, in under-developed countries there is a people surplus problem leading to huge slum areas. There is much current study and action programs which have uncovered some very cogent questions about the weaknesses of administrative techniques and inadequacies in our form of government to cope with urbanization.

g. Pressures on Natural Resources and the Physical Environment. A natural result of continuing processes of growth is the tendency to press against limits. This is the one basic premise of the Conservation Movement. Yet many of our problems in this country arise from surplusses rather than shortages. Impending scarcity is forestalled by new discoveries, new techniques, and substitution. Some way with enough technology, foresight and control of the population problems of resource scarcity can be solved for the foreseeable future. However, there is little evidence that we can have any of these under control.

In light of recent concern about the quality of the physical environment, the question of natural resource scarcity may be moot. The real impacts of the Environmental Movement on world economic and social structure are just beginning.

2. Innovative Processes: Science, Technology, and Invention. Innovating processes involve elements of novelty and the unexpected. Used here science underlies applied science or technology and technology provides the framework within which most invention occurs. Some discovery occurs without technology.

a. Procedures of Normal Science. The question is how does innovation occur? Thomas S. Kuhn said, "Scientific revolutions involve an intellectual crisis in which the members of a scientific community find some of their previous beliefs shattered under the impact of a new theory of wide applicability and great explanatory value." But the procedures of normal science go on with emphasis on the sequence of: observation, data collection, experimentation, generalization, verification, and proof. The intuitive and creative aspects can easily become lost in this process. Very little study has occurred on how creativity occurs. Those who have been creative say much is perceptive intuition.

b. Revolutions in Science. Generally scientific knowledge is described as additive yet it may be more accurate to describe it as revolution in the sequence: paradigm--anamoly --crisis--new paridigm.

c. Frontiers in Modern Science. The important point here is to recognize that, in terms of new paridigms, science, in any one field, is at some stage. It is helpful for futurists to know what is happening on the frontier. Work being done on the frontier of biology is resulting in talk of artificially creating life forms in the near future. The implications on current beliefs is almost beyond comprehension.

d. Frontiers of Modern Science: Heredity vs Environment. Well favored individuals tend to regard heredity as pre-eminent while those less fortunate often favor environmental explanations of differences. Researches in biology, anthropology, psychology, and sociology are accumulating significant knowledge in this area.

e. Origins of Technology and Invention. Study finds more than one-half of the important inventions of this century were made by individual inventors with a minimum of financial support. But there are important differences between fields in the extent to which this is possible.

f. Military Technology. This is the field where science is probably having its greatest impact on technology and thereby is having its greatest influence on contemporary world history. Man has the capability to kill everyone several times over. What is the potential for a fatal error? How can you test the ultimate weapon?

g. Space Exploration. The Russians launched Sputnik I in 1957 and the U.S. put men on the moon in 1969. What is the basis for the expenditure of billions each year, scientific knowledge, military advantage, or pride? What the hell are we doing with the SST?

h. Effects of the Contemporary Expansion of Science, Technology, and Invention. The rate of scientific expansion has been described as exponential. Scientific manpower has doubled every 15 years to the extent that seven-eighths of all scientists are currently still living. The amount of scientific knowledge to be stored and assimilated is staggering. As of 1960 there were six million scientific papers in 50,000 scientific periodicals. There is an information overload for every scholar with scientific interests.

As futurists, we need to know that there is a main line of causation which seems to run from science to technology to changes in the economic system of production and consumption; then spreading changes in social habits and institutions, and eventually changing social, religious, and political beliefs.

3. Ideological Processes: Belief Systems and Their Impact. Belief systems have a life of their own. The first ones were handed down by word or song and largely concerned the surrounding environment. Religion is one of the oldest; usually there is a conversion experience leading to a reorientation of beliefs. Much is automatic, unconscious, and inarticulate.

a. The Nature of Belief Systems and Mass Movements. This is very current with the Black Revolution, the New Left, the Right, Love or Leave, etc. Eric Hoffer is a student of belief systems; in his book, The True Believer, he points out that people tend to become frustrated with their environment and tend to do something about it. But it is those who have had some taste of success not the lowest who are the main adherents. Hoffer discusses the role of three types:

(1) Men of words--set the stage with intellectual basics.
(2) Fanatics--seize control, do things wildly-compete.
(3) Men of action--establish and operate a workable new regime.

The main points are that belief systems are believed and therefore don't need to be proved and they provide answers to peoples' frustrations without their having to apply reason.

b. The Higher Religions. Christianity, Islam, and Buddhism occupy pre-eminence among belief systems because they are a statement of fundamental value for millions of adherents. There is evidence of a softening among all religions as to their exclusive possession of religious truth. The future is still obscure as the major religions strive, in the face of reality, for relevancy.

c. Science and Its Impact. Science has an erosive effect on religion and supplants its own beliefs. The two main examples are Newtonian physics and Darwin's work on the origin of man.

d. Communism. This is a modern, secular belief system with a small group of authors, namely--Marx and Engels. Lenin converted it to whatever he needed to run the revolution and Stalin and Mao have further utilized its extreme flexibility. Essentially, Marx said as production increases, so would class struggle and the workers would take over. It begins as a moralistic protest and has appeal to workers. The party is a sect like a church and its appeal is to overcome injustice, provide economic aid, provide comfort to the alienated, and provide a group identity. The communist beliefs include: one monolithic, infallible party, subversion of the individual, impede religion, higher education and militaristic industralization.

e. Nationalism. After WW II, many thought nationalism was dead, especially in the communist block, but there is a constant resurgence. Nationalism fails in cohesion, ideology, and economic function, therefore for all its energy and innovation, it is not a sufficient principle of cohesion for a troubled world.

As futurists, we must ask the questions: Can there ever be world order without harmony among religions and nations, and are any of our other belief systems psychotic? Where is the pressure for changing belief systems? What about the youth and the hippies, etc?

4. Conflict Processes

a. A General Theory of Conflict. Notwithstanding the place of conflict in history, little real academic research has been done. One theory is that conflict is a social process in which war is a special case. There must be parties (behavior units), behavior space (in which each party has a position and a history), competition (where the position of two behavior units are mutually incompatible), conflict (a situation where each party is aware of incompatible position). There are several approaches to the dynamics of conflict, e.g., the Richardson Process Models (successive actions until a boundary or equilibrium is reached), and Game Theory. To end conflict, there can be avoidance, reconciliation, compromise, award or mediation.

b. War as a Recurring Phenomenon. Quincey Wright discusses four levels of war.

(1) Technological - usually thought of as the great balancing process between technological powers.

(2) Legal - the rationalization of war in the name of the state and in terms of the law.

(3) Sociological - the conflict of cultures.

(4) Psychological - clashes of individuals in mass.

c. Contemporary Guerrilla Warfare. This type of "irregular" warfare receives mixed emotions, but it can be very effective. The principles are: mobility, surprise, avoidance of pitched battle, live with the people; and the maintenance of a strong idea. There is a real question as to whether democratic countries can be strong enough to be counter-guerrillas. Very often the best guerrilla leaders are non-military. There seems to be three distinct phases to guerrilla wars: 1) an initial phase when guerrillas are too weak to attack so they retreat, countering when they can, 2) a second phase when they gain enough strength to carry out frequent surprise attacks and 3) a final sustained attack phase. The latest aspect is urban guerrillas.

d. Predictability of War. The probability of war is often based on plain distance both in space and policy. The four main ways to predict war are: 1) analysis of experts' opinions (delphi), 2) extrapolation from **indices**, 3) periodicity of crisis and analysis of distances.

Peoples' feelings about war have changed from war being a right to it being a crime.

5. Communicative and Learning Processes. Learning and communicating with diverse peoples is a possible solution to conflict.

a. Communication Across Culture and Social System Boundaries. The U.S. tries to communicate but is largely ignorant of other cultures and there is a tendency to believe that so long as we supply dollars to other people they should do what we want. Edward Hall has described ten kinds of activity through which we can communicate: interaction, association, subsistence, bisexuality, territoriality, temporality, learning, play, defense, and exploitation.

b. Communication Through the Mass Media and Mass Culture. Much is said about TV changing the habits and actions of people, especially children. Others, however, view the mass media as only one of a set of interacting factors working to induce a response; success depends on the reinforcement of old ideas or conversion to new ones. In other words, the media doesn't determine tastes, rather persons select from the media the fare which is in accord with their existing likes. I could discuss Marshall McLuhan, but he has me snowed, too, by now.

c. The Production and Distribution of Knowledge. The production and distribution of knowledge is a major occupation of technologically advanced countries. In 1958, it was 30% of GNP. In 1963, it was up 43%. The production of measurable knowledge grows faster than economic growth because it both generates it and feeds on it.

d. Education Systems and Their Consequences. What schools do is a function of what families want. In ghettos, peoples' chances are low. Some believe schools should teach them realistically for jobs they can get. In the white suburbs, families often push their children far beyond their ability for appearances.

e. Higher Education. The University in the U.S. is in trouble yet the cause is largely unknown. Traditionally, the British stress high quality, the Germans research, but in the U.S. the University is all things to all people. The choices for universities has been either move into the market place or become a retreat.

6. Predictive and Policy Processes.

a. Hudson Institute View of the Future. The firm has done futures research mostly for the Defense Department. They utilize three approaches for systematic prediction: long term trends, a cluster system of significant events, and the construction of significant baselines.

b. Technical and Philosophical Problems of Predictions. Philosophically, one must consider the values involved in predictions. For example, there are guiding predictions which are based on what you want to see happen. Predictions can be made just to overcome indecision so you might as well utilize a coin flip. Finally, one can play a sort of guessing game. Guiding predictions appear to be the most serious and a useful approach seems to be to apply logical truth, induction, statistical inference, and some good intuition. There must also be some prediction of values and some description of alternative futures.

The forecasting of technical events must examine invention, innovation, and diffusion. Forecasts are usually used to aid current decisions. Scenarios are descriptions of specific conditions based on assumptions. Sometimes it is helpful to determine the thresholds or where the sharp breaks are. Much is being done with computerized models. Some change is crescive, that is, it occurs slowly over time, e.g., population.

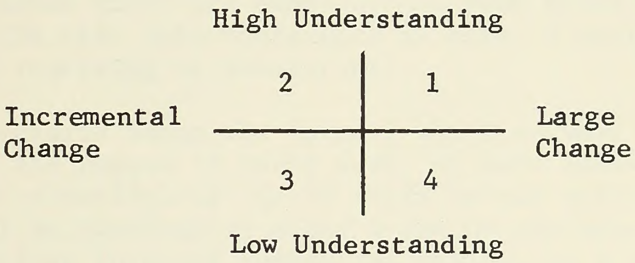
c. Some Substantive Areas of Prediction.

- The future of the nation-State and empires.
- Effectiveness of international organizations.
- Changes in communism, nuclear response, and technology
- Intellectual institutions, chemicals, drugs, and where the money is.
- Mass movements, automation-computers.
- Control of behavior and personality.

7. Leadership and Control Processes.

a. Government as Steering Mechanism. It is a mistake to assume that everyone wants rationality. But most people, particularly since the real threat of nuclear war, depend on their governments--they have been politicized. What do they ask from government--survival, welfare, and the good life. The task requires the best use of: the intellectual equipment at hand, wisdom--deciding which problems are worth solving--and receptive reasoning which involves receiving and evaluating information. Many believe government should operate on communication theory and cybernetics. That is, seek goals, obtain and analyze feedback and make adjustments. It must have a consciousness and some degree of autonomy. There must be some balance between outside influence and internal direction. It must in fact exhibit in a real way attributes of humility, faith, reverence, grace and love.

b. Limits of Rational Decision-Making. Conventional decision-making involves the application of theory, examination of variables, estimate of values and the presumption of one best policy. This is not always good because, in degree, it cuts too fine and often there is no theory. Some suggest using incremental analysis--looking at the results of small changes. Braybrooke and Lindbloom, in A Strategy of Decision, use the following diagram:



Quadrant 1 - Least likely to know all there is when a large change decision is required.
Quadrant 2 - For technicians not high level Bureau heads.
Quadrant 3 - Typical everyday decisions.
Quadrant 4 - Not too common, e.g., Truman--the bomb in Hiroshima.

c. Top Leaders in History. The main question is do events make the man or the man make the events? Man can play a causal influence in some situations. Most people don't get involved but tend to become disappointed in those that do. History tends to decide but a genuine alternative must exist then the man is either eventful (there) or event-making (his attributes are an integral part of the change).

d. Control of Top Leaders. In a democracy, there must be some control of leaders because they can cause wars, revolutions, and conquests. Leaders may believe the majority is wrong or too slow. In a democracy it is the teacher not the soldier who must be the hero and this is sometimes difficult. The people must keep the power of removal.

One must conclude that man is neither just a creature of his environment nor ruler of his fate. To advance he must seize those alternatives which become open and appear good. This is accomplished by being perceptive to change--to be a Futurist. This paper has attempted to provide a tool----the processes of change for those who might find it useful.

INFORMATION SOURCES AND TECHNIQUES

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Introduction

When I received the program I thought that I could do a more adequate job with the subject, "Information Sources and Techniques," if I had the benefit of the conference proceedings. Perhaps other speakers feel the same way. Since this was not possible, I have constructed my own view of the United States and the universe in 2000, my own view of the future of the public lands, and my own view of the future of the Bureau of Land Management as a framework for suggesting "Information Sources and Techniques." These views are probably not your views, and I have no doubt that by the time this conference is over, I would be rewriting this paper and reworking my priorities.

In writing a scenario about the future, which is what city and regional planners do by the nature of their work, we have discovered two futures. The first is a technological one in which we can estimate the number of years that will be required to place a man on the moon or Mars, to develop a smog-free internal combustion engine, or a super-sonic transport. And the second future is the social and economic consequences of technological change. The first might also be characterized as a quantitative change concerned with the quantities of goods and services, and the second might be characterized as being more concerned with the quality of life.

While we have been fairly successful in predicting the first, we have been somewhat less successful in predicting the second. Even here we have had some successes, although these largely are concerned with numbers. We can predict a trillion dollars of gross national product, an average family income of $25,000 and an economy in which over 100 million persons of an estimated 300 million in the United States will be employed. We can even predict the continuing decline of the average family size, the distribution of employment by type, and probable family spending patterns. Where we have had less success is in predicting the social and economic institutions, which will result as a consequence of these quantitative changes, and what further changes may be engendered in our social, economic and political institutions.

We are witnessing the inability of government to deal with the pollution of the air, land and water, while we observe the accelerating destruction of the quality of our environment. We are also becoming aware of similar problems all over the globe, and that some of these problems are global. Choking smog in Madrid and Tokyo are near catastrophic proportions. The Danube and the Elbe Rivers have killed river life and rendered them lifeless.

How are we doing in the pollution fight? Cities and counties are faced with the immediate problems of pollution, but the problems transcend their jurisdiction. The States, who should act to preserve the environment, are reduced to inaction in the struggle to preserve local home rule, the need to raise new revenues, and economic and development pressures difficult to resist. The Federal Government, which has the financial resources, does not appear willing or able to apply them in a telling way.

The controversy of the SST demonstrates how environmental problems are becoming international in scope. Russell E. Train, chairman of the Council on Environmental Quality, recently noted that the SST's will operate at altitudes of 50,000 to 70,000 feet, where there is comparatively little vertical mixing of air. There will be a tendency for the waste, carbon dioxide and particles that are discharged by the SST engines to remain in this area of the atmosphere for longer periods than is the case at lower altitudes. A buildup of water content could create a more or less permanent cloud cover at certain latitudes, with unpredictable effects on weather around the world. The water vapor would also destroy some fraction of the ozone in that part of the atmosphere--and ozone plays a key role in shielding the earth from ultraviolet rays of the sun. Some environmental experts are inclined to doubt that the effects will prove important. Others believe the effects to be vital and that the SST program should be stopped.

In the meantime, the Anglo-French Concorde is expected to be in the North Atlantic airline service in late 1973. The Russian version is on a similar schedule. There is a prospect of 400 to 500 SST's flying around the world in the 1980's whether or not an American SST is built. The United States concern over the effects of stratosphere contamination should also be the concern of the British, French, and Russians. If possible, a joint program should be agreed upon and the results of which should be accepted by everyone.

A similar international concern over the environment is in the making as a result of the United States decision to dump liquid nerve gas off the coast of Florida. The British Government has issued a strong protest on behalf of the Bahamian and British Governments. And what about oil spills, leaks and transport, and the disposal of atomic wastes--can national governments act unilaterally? If the past three centuries were spent exploring the earth for resources, are we likely to spend the next three searching for locations to dump their wastes? We may be opening a whole new area for diplomatic negotiations as a matter of survival.

For what are we planning? We are planning the public lands. Or more correctly, we are planning the public lands to serve the people of the nation. For many years this has meant the disposition, the exploitation and the development of public lands. However, in the 1960's we have tipped the scales in favor of retention, conservation, and preservation. Whereas, formerly the public lands served the people of the nation by a policy of disposition, in the future the public lands can best serve the nation by a policy of retention. Congress has not changed public policy through legislation, rather administrative action has rendered the disposal policy ineffective and time has demonstrated the desirability of this policy. One cannot but wish the change in policy was applied earlier, particularly around our sprawling metropolitan areas.

Planning for retention, conservation and preservation by the Federal Government will bring new responsibilities to those agencies administering the public lands. This is not to say that there will be no disposition, exploitation or development. There will be, but they will be based on different criteria, serve different ends and will be monitored to assure that the lands disposed of as well as the lands retained serve the public interest.

For the lands that are retained, let me suggest some changes in the wind that will be full-blown by 1990. These views are based upon a profile of the United States in 1990. They will not all require twenty years to mature. Some may require a longer period, but they are beginning to make their mark on our attitudes and our policies vis-a-vis the public lands.

1. User Groups - More user groups, rather than fewer. A shift in the strength and the influence among groups. Less strength among the traditional groups--grazing, timber and mining, and more among the consumer-oriented groups--hunting and fishing, recreation, and conservation and preservation interests. A growing conflict among user groups for pre-emptive use of public lands.

2. A National Policy for Land Use - A national policy for land use will have been developed and will be given statutory expression. It will contain the following: (a) a spatial distribution of cities and towns, (b) recommendations for urban containment and intensification, (c) planned urban expansion by regions, (d) new metropolises, (e) urban growth corridors, (f) satellite new town or city dispersal, (g) growth reduction through interstate compacts, (h) Use of public lands for new cities and open space system, (i) water resource development policy, (j) power and energy resource development policy, (k) a system of transportation that will serve our cities and regions, (l) the distribution of economic activities to serve an expanded urbanizing nation, (m) a system of social services and facilities so that all people can participate in a full life in America, and (n) direction and opportunity for corporate and private investment.

The States will use it because Federal subventions and revenue-sharing with the States and localities will depend upon it. The Federal Government will also use it as a means of bringing order to the expanded programs of land, air, and water pollution, a Federal-State system of outdoor recreation and open space and as a measure of performance by States and localities.

3. A National Policy of Land Acquisition - the Federal Government will engage in a selected policy of land acquisition. The Federal Government will purchase land directly and jointly with the States and local governments for a variety of public purposes. These will include

acquisition of lands of outstanding scenic and natural beauty, in-holdings of otherwise contiguous lands that serve a public purpose, lands that are now or will become part of the system of outdoor recreation and open space, lands on the periphery of metropolitan areas, and lands of a specialized character such as forests, flood plains, unusual ore deposits, or unique recreational features.

A Profile of the United States in 2000

When I was a student, one of my professors said, "If you want to explain anything in contemporary urban life, blame it on the industrial revolution and you are probably right." What do I wish to blame on the industrial revolution?

First of all, the growth of American cities. Industrial production brought increased opportunity for employment--employment which was concentrated in our cities. Industry attracted farm workers to the cities in search of a livelihood, the more abundant life, and a variety of attractions from independence and privacy to the exploration of the open society. In 1790, 95 percent of almost 4 million people lived on farms and in rural areas. One hundred and eighty years later, more than 70 percent of more than 202 million people live in the cities. And the trend does not yet show signs of abatement.

A sidelight of our industrial growth and the population concentrations in our cities is the movement of population from the rural south. The industrial revolution on the nation's farms can be traced to the invention of the reaper by Cyrus McCormick, but the quickened pace in post-war years is the result of a second revolution.

While technology increased farm productivity, managerial science increased profit. Together they demonstrated that the nation could produce more farm products on less land and with considerably less human effort. It has been estimated that we produce 50 percent more than we consume. Compare this with Europe which consumes as much as it produces, and with Asia and South America which produce about 50 percent of their agricultural food requirements.

The industrial revolution on the farms resulted in an increased migration of blacks from the rural south to the nation's cities. "In 1910, 91 percent of the nation's 9.8 million American Negroes lived in the Old South; by 1966, while Negro population had doubled to 21.5 million, the number living in metropolitan areas had risen to 14.8 million and the number living outside the South had increased elevenfold to 9.7 million." However, there was an indication that the long exodus of Negroes from the rural South had slowed between 1966 and 1968, although the numbers and percentage of Negroes in our large metropolitan areas will continue to increase. "The great wave of migration is over with now and a stabilization period is beginning. Natural increase is the main cause of population growth of Negroes now in urban centers."

The second major change has been the growth in per capita income. In 1950 per capita income was $1,496; in 1966 it advanced to $2,963. This was a 98 percent increase and represents a substantial increase in real income. Per capita income has increased more than two times the advance of prices.

Expanded per capita income and spending has sustained prosperity for a decade. In fact, continued personal spending at high levels invites inflation and threatens the gains made since 1950.

The third major change has been the growth in employment. Over 70 million Americans are gainfully employed. It was not too long ago when 60 million employed seemed like an unattainable goal.

With the increase in the number of employed there have been some remarkable shifts in the kinds of employment. Between 1946 and 1969 there has been a 67 percent increase in the number employed, from approximately 42 million to 70 million. However, there have been major shifts among occupations.

Employees on Non-Agriculture Payrolls, By Industry Divisions (in thousands)

	1946	Nov. 1968	Percent Change
TOTAL	41,674	69,421	+ 67%
Mining	862	640	- 26%
Construction	1,661	3,355	+114%
Manufacturing	14,703	19,962	+ 36%
Transportation & Util.	4,061	8,376	+107%
Wholesale & Retail Trade	8,376	14,548	+ 74%
Finance, Insurance & Real Estate	1,697	3,404	+100%
Services	4,719	10,637	+125%
Government			
Total	5,595	12,470	+122%
Federal	2,254	3,341	+ 48%
State & Local	2,697	9,773	+262%

Source: Employment and Earnings and Monthly Report on the Labor Force U.S. Dept. of Labor, Bureau of Labor Statistics, Dec. 1968, Vol. 15:6, p. 39.

These three indicators of change--one, the growth and redistribution of population in our cities and metropolitan areas; two, the sharp rise in per capita income; and three, the change in employment characteristics--all have significant bearing on existing and future demands for land for urban development.

Let us examine projections of these same indicators of change to the year 2000, and bear in mind that policies formulated in the next few years will shape our urban and rural environment for the year 2000 and beyond.

Population and Cities - by the year 2000 it is estimated that the United States will have 300+ million persons. Virtually all of this increase of 100 million persons will accrue to existing cities and metropolitan areas and by the year 2000, 85 percent of our population will be urban and 15 percent will reside in rural areas. This assumes that present policies, or "non-policy," will continue so that new urbanization will be concentrated in existing urban areas, but not within the boundaries of present urban areas because we are building at lower average densities in our cities and suburbs.

Per Capita Personal Income - by the year 2000 it is estimated that per capita income will increase from $2,963 in 1966 "to something over $4,000 to perhaps $20,000 per capita." This is a wide range, but it is related to annual rates of growth--the increase in our Gross National Product which ranges from a high of $3.6 trillion to a low of $2.2 trillion. In any case, individuals and families will have considerably more disposable income than they have today.

Employment Characteristics - by the year 2000 it is estimated that there will be 126.6 million persons employed in the United States as against the 70 million employed in 1970. This is an increase of 56.6 million persons, or 81 percent over 1970. Major increases occur in the Trade and the Services categories, a tripling of each and together will account for 69 million employed, or about 55 percent of total employment.

In addition to population, income and employment, there are significant trends that will shape the form, location and extent of the development of our environment. These are listed for convenience.

1. While more people will live longer, the median age of the total population will continue to decline. While growing older, we will become a more youthful nation.

2. More students in school for longer time periods.

3. A shorter work week with a four-day week common by 1980 and possibly a three-day week by the year 2000.

4. More leisure time, and more time spent in outdoor recreation.

5. Increased demand for vacation and second homes.

6. More travel, particularly automobile; more vehicles per capita and more miles per vehicle, but also increased air travel.

7. The industrialization of housing production.

8. Continued improvement in communications technology--greater capacities for handling messages and information and some substitution of communication for trips.

9. Great volumes of waste products--atmospheric, liquid and solid--resulting from consumption and production activities. Growing search for disposal sites.

10. Increased productivity of urban space, measured by value of activity supported on it.

When we examine these trends, many of which are clearly defined with accelerated rates of growth, a pattern of urbanization emerges. It is a pattern to which the name "megalopolis" has been applied and means the continuous urban growth of our cities at their peripheries until cities merge and obliterate the countryside. This is the American prospect under the absence of urban land development policy, or our "non-policy."

If the present trends continue, the year 2000 will see three or four major megalopolises. One study indicates a linear urban concentration from Boston to Washington, D. C. containing 68 million people; a second concentration from Utica, New York to Chicago containing 61 million people, and a third from San Francisco to San Diego containing 44.5 million persons. These and other small urban concentrations will account for 241 million persons, or 77 percent of the total population.

Almost 11 percent, or 337,350 square miles of a total of 2,968,081 square miles of the Continental United States, will be required to accommodate 300+ million persons. While our population is increasing by 50 percent, our land requirements for urban expansion will be increasing 127 percent.

Demand for Land

One of the significant developments of our century has been the increased demand for land for all purposes. Technology, and particularly the automobile, has forced increased requirements for land. More land is required when the automobile is moving and more land is required when the automobile is standing still. Since the automobile has pervaded our homes, our work, our shopping, our school and our recreation, it has forced increased land requirements for all these uses.

In addition, there have been substantial changes in the operation of our residential, work, shopping, school, and recreation areas. Single-family homes consume more land than apartments; one-story plants are generally preferred for industrial production, and even warehousing; shopping centers concentrate shops, but provide other land-consuming amenities; the one-story school is preferred for safety and flexibility; and recreation demand is on a trajectory that appears to be straight up. All require more land for their functions and new standards have to be prepared to guide their development.

The increased demand for land in our cities and urban areas has made us aware of the competition for land among uses. We are accustomed to disputes between residential and business or industry, or single-family and multi-family, or single-family on large lots and single-family on small lots. We have seen some interesting disputes among public uses--freeways against parks or watershed areas, or schools against parks, or defense use against waterfront, or open space against port facilities.

We have, nevertheless, been confident that competing uses could be accommodated, the conflicts resolved, and that all uses necessary for urban life would be provided. While the approach and the results are far from perfected, the problem has been recognized and an attempt at treatment has been made through comprehensive planning.

The approach to city, county, and regional planning has been a "balance of uses." Plans accommodate all uses, even obnoxious ones, in combinations that promote economic efficiency, and hopefully a desirable environment. Comprehensive general or master planning should satisfy goals and objectives developed in the community, and be rooted in the economic prospects of the locality and the economic prospects should be related to the regional and national economic realities. This is the rational approach to long-range, comprehensive planning.

While the competition among urban land uses has been recognized and we have developed the political and administrative processes to deal with them, how well are we prepared for competition among uses on rural and unoccupied lands?

First of all, in absolute terms there is no land shortage in the United States. There is still plenty of land available, particularly in the Western States. This should not be taken to mean that there are no relative shortages in particular locations. Or that additional shortages will not be generated by the year 2000.

The increased interest and the demand for rural and unoccupied lands, to a large extent, comes from urban residents. It is not only the demand for commodities, but the demand for open space and outdoor recreation to provide relief from the city and renewal of the human spirit. Today, there are major uses of regional and national import competing for the same parcel of land. I shall list a few that made headlines in 1969.

1. Recreation and natural scenic beauty competing against water storage and supply.

2. A natural resource, specifically redwood trees, competing against lumbering.

3. A herd of wild horses competing against grazing lands.

4. Dams, reservoirs, and highways competing against summer homes and cabins in the same canyon.

5. Nuclear power facilities competing against scenic recreation areas.

6. Large motorcycles competing against small motorcycles on lands formerly considered waste lands.

7. Recreation vehicles competing against lands all over the West and threatening soil stability.

What is significant about this list is that the competition for land in rural and open space areas has changed from competition among resource land uses such as timber, grazing, fish and wildlife, water resources, mining, and even outdoor recreation, to competition between natural resource uses and urban uses such as residential subdivisions, vacation and second homes, intensive recreation, and increased demands for fuel and power to serve urban populations. The increased competition for land is one of the sure signs that our world is shrinking. The old dichotomies or urban and rural, city and country, conservation and development are not disappearing. On the contrary, they are being brought into sharp focus as a result of these land use conflicts.

The interaction of our abundant lands, our abundant natural resources, and a political philosophy which permits and encourages their development for private gain has reached a point where we must examine whether the nation can afford these land use conflicts. The increased air, land, and water pollution affect city and country alike. Air pollution generated in concentrated urban areas is destroying farm crops in the hinterland; increased urban waste may be disposed of at some distance from the city, and residential subdivisions have consumed vast acreages of class "A" lands which are irreplaceable; and insecticides which increase farm production may, when sluiced into streams and rivers, destroy wildlife, downstream urban beaches and recreation areas.

Instead of competition among the uses of land, we need a balancing of urban and rural uses. The principles of ecology will have to be recognized. The relationships between organisms and their environment in a rural setting and the spacing of people and their institutions in an urban setting will have to be ordered so that we consider the spacing of people in relationship to the total environment, urban and rural. To provide a better life in our cities, towns, and farms, a reasoned approach to the utilization of our land and resources and a balance between conservation and development.

Information Sources and Techniques

There is a substantial difference in approach to urban and metropolitan planning from regional planning, or, as it has lately come to be called, environmental resource analysis or planning. The former may start with a substantial human settlement which may be the base for further development. The latter may start with sparse or little human settlement and may raise the question at the outset whether any human settlement may be desirable.

The former would require an evaluation of the economic position of the urban concentration in the State, region, and nation; a projection of probable economic activity translated into jobs and space requirements; an estimate of probable population necessary to support the emerging economy; an estimate of personal income of the population; and finally, an estimate of land area requirements for all human activities. The planning of the urban area may be resolved in alternate ways of settling future population and activities on the land. The limitations of the land--topography, geology, climate and weather, soils, etc.--are taken into account in the suggested settlement or development patterns.

The latter would require an evaluation of the land and water capabilities as a point of departure. Greater emphasis is given to the physiographic features, the ecological factors, and the limitations of land over that of determining its potential for use and development.

I would further classify the two approaches by saying that urban and metropolitan planning attempt to accommodate growth and development, whereas regional or environmental planning tends to restrict development based upon land and water capabilities. The former may be expansionistic and the latter conservationistic. However, only when you have a view of one and not the other are they antagonistic.

The growth of our urban population and urban areas has set in motion a chain of new demands. We need more land for all urban activities. The man-land ratio continues to increase, particularly as we move out from the urban centers. In addition, the growth of our urban population and our relative affluence have created new demands on seemingly remote lands.

The demand for recreation use of the lands has endangered national parks, recreation areas and wilderness areas. Overuse threatens flora and fauna, and some park managers talk about limiting visitations to prevent obliteration. Already Yosemite National Park has limited automobiles from entering the valley floor. Can you envision a limit, comparable to occupancy limits on places of assembly under fire code regulations, placed on national parks and other recreation areas? Even if more facilities are provided and better distributed, it may be necessary to consider use limitations on the older, established facilities. Remoteness is no longer adequate insurance for the regeneration and preservation of life in our parks.

The demand for power and energy and the concomitant demand of land and water is on an accelerated rate. In California, admittedly one of the more prosperous States, the demand to the end of the century based upon a doubling every nine years means California's power-generating capacity will have to be multiplied 500 times.

In addition to recreation and power, the expanding need for commodities has placed new demands on the public lands. Although substitute products for wood continue to increase, the total domestic production of wood products in the United States continues to increase and the Federal lands contribute an increasing share until it presently constitutes one-third of the total production. Similar demands can be cited for water, fish, and wildlife, and intensive agriculture, and to a lesser extent, mineral and range resources. In the face of competing demands for the public land, what are desirable techniques or methodologies to their planning?

Let me identify three approaches to environmental resource analysis that are identified with their authors.

1. Potential productivity of land to evaluate its present or future use to determine if it can be made economically feasible and socially desirable -- G. Angus Hills.

2. Incorporation of ecological factors and visual indicators into the general planning process to identify prime lands for recreation and conservation purposes -- Philip H. Lewis.

3. Ecological approach to regional and urban planning and design problems, based on data obtained from the natural sciences -- Ian L. McHarg.

I will further summarize a statement and summary of each that can be found in the report, "Three Approaches to Environmental Resource Analysis," published by The Conservation Foundation in 1967.

G. Angus Hills

1. Inventory: Use of Bench Marks
    a. Problem: How to reduce time and cost needed to collect ecological information for local and regional areas.
    b. Solution: Select areas of extreme physiographic conditions called "bench marks", and collect data in "local reference areas" around these bench marks.
    c. Significance:
        (1) The bench mark provides a means of obtaining accurate generalized information on an area, and at the same time helps guide local-level decisions.
        (2) The bench mark provides a means of comparing the productivity potential of a piece of land at two steps in the analysis.
        (3) A description of the physiographic conditions between bench marks was part of the process used to delineate the land units.

2. Classification: Use of Physiographic Load Units
    a. Problem: Find a way to classify land permanently for a variety of regional planning purposes.
    b. Solution: Subdivide the land into geographic units with common permanent physiographic features. Create a hierarchical land classification system based on biological interrelationships.
    c. Significance: Establish a framework for varying levels of planning decisions. Lands are evaluated without present human activities.

3. Evaluation:

a. Problem: Distinguish between the land's true potential (capability), its existing conditions (suitability), and its present and forecasted socio-economic conditions (feasibility).

b. Solution: Develop three kinds of evaluation: capability, suitability, and feasibility.

c. Significance: Land can be evaluated on its true (capability), immediate (suitability), and likely (feasibility) potential. This is done by separating the present and forecasted social and economic conditions from the present use of the land; also separated is the inherent and true potential of the land. A related problem was to distinguish between the capability of a local area and its capabilities within the context of a larger area or region.

Philip H. Lewis

1. Inventory: Visual Contrast and Diversity

a. Problem: How to analyze and interpret the visual qualities of an area and use through regional planning.

b. Solution: Establish criteria to evaluate visual features by selecting outstanding landscape features that contribute visual contrast and diversity. Criteria are varied for different types of landscapes.

c. Significance: Permits building on the visual sensitivity of a landscape architect.

2. Classification: Corridor Pattern

a. Problem: How to organize information for large areas and combine it into a comprehensive pattern or structure.

b. Solution: Group or combine many of the independent elements of landscape into a single pattern.

c. Significance: Natural features can be grouped into larger patterns, and man-made features can also be added to the patterns.

3. Evaluation: Numerical System of Ranking

a. Problem: Establish priorities among the wide variety of natural and cultural resources that determine the quality of the environment.

b. Solution: Develop a numerical system for ranking by assigning major features, additional features and groupings of features.

c. Significance: Developed method of assigning a non-monetary value to these resources. (This feature is also common to other methodologies. Hill uses degrees of effort for capability evaluation and McHarg uses the"least social cost".)

Ian L. McHarg

1. Inventory: Ecological Cause and Consequence

a. Problem: Identify all natural processes that might affect or be applied to regional planning and design.

b. Solution: Find indicators of the natural processes by interpreting plant communities and other natural features.

c. Significance: By studying the evolution of natural features it is possible to generate a wide range of resource information needed in regional planning and design process.

2. Classification: Interpretation of Natural Processes

a. Problem: Organize information about natural processes in that it would be understandable and useful to the regional planner.

b. Solution: Identify the individual processes, organize them separately, and supplement them by illustrations and descriptions of related processes.

c. Significance: Able to make the natural processes become alive and meaningful as an ecological system. The process, once identified, can be considered individually for the effects of each potential land use.

3. Evaluation: Values of Natural Processes

a. Problem: How to incorporate data about the natural processes into regional planning.

b. Solution: Assign values to each natural process according to inherent qualities, productivity, work performed and potential hazards. After the values were assigned, principles and policies were formulated for the limiting factors which represented the natural processes.

c. Significance: The causes and consequences--related policies limitations and prohibitions--provide the means to select the best alternatives for orderly growth and development. The advantage of determining the basic limitations of land over that of determining its true potential is that one can give values to each parcel of land, change the values in accordance with possible policy decisions, and predict the consequences of alternatives.

I will not attempt to compare and evaluate each of the three approaches to environmental resource analysis. This is done well in the document to which I referred. Each methodology has its advantages and limitations. What is important is to note the state of the art in its struggle to become more scientific in approach.

Social and Economic Factors

In effort to stress the discovery and exposure of inherent qualities and values in the environment, the authors treat too briefly the problems of economic and social evaluation. This is at once a strength and a weakness. Users of the methodologies are able to emphasize the analysis of the natural resource base, but by doing so "they leave to the larger process many of the problems of value identification and social and economic analysis that are often considered to be central to the problem of resource planning."

Definition of a Region or Area

The problem of defining a workable area is one closely related to the availability of data. Physiographically defined areas do not coincide with areas identified through the analysis of social, economic, and political problems. Because of the costs and problems of inventory and data collection is it possible to use selective data? The problem here is an old one--which

which data are to be selected? This is further complicated by the injection of ecological considerations, which require more rather than less data, in order to understand the effects of changes in land use or intensity of use.

It is suggested that a more flexible alternative to the natural-unit concept might be a generalized arbitrary, spatial unit. A uniform grid based upon the Universal Transverse Mercator coordinate system may be used. This system would lend itself to computerization, the build-up of data inventory, and simulation of the environment in response to policy decisions. Such a system may be in the making, but it is not here as yet.

Environmental Quality

The three approaches have contributed significantly to the importance of environmental quality of the physical environment but have not been able to provide enough measurable data to compare it with economic and other data. However, the work has emphasized that a most important aspect is the maintenance or creation of environmental diversity.

The studies point out "one of the biggest problems the 'conservation ethic' must face is to devise a way of establishing priorities for setting aside certain lands for specific recreation and open-space purposes. What may be needed is a comprehensive classification of all known open-space uses, so that land can be viewed in terms of any of these purposes."

Supply and Demand

The extent to which it is possible to analyze the physical characteristics in isolation from social and economic factors is central to all three approaches. However, it is difficult to analyze the potential use of land without knowing something about the nature and locational aspects of demand. It is important to know the intrinsic suitabilities of any area because demand can only be based upon today's values and concepts of resource use, and because accessibility implies only the consideration of areas near present or potential population centers.

In conclusion, let me say that regional planning and environmental analysis has been largely neglected until our recent concern with the quality of the environment. The methodologies described are largely physiographically oriented. As important as they are, they cannot over-shadow the social and economic analyses. It seems that improvement in methodology may require the blending of urban planning and environmental analysis and regional planning. However, it seems to me that the entire process will enjoy some advancement when the Congress provides direction to the Federal agencies administering the public lands by enacting into legislation recommendations of the Public Land Law Review Commission.

THE FUTURE OF BLM

IRVING SENZEL
ASSISTANT DIRECTOR, LEGISLATION AND PLANS

These remarks will be brief because we want a wide-open discussion. We want to think and talk about the future. Although the topic is "The Future of BLM," we really want to think about the future of the public land. We will assume that there will be an organization to be concerned about public land. Whether it is called BLM is not too relevant.

We want to adopt a new way of thinking. This new way may be called the ecosystems approach to public lands. The ecosystems approach is the theme of a paper by Lynton K. Caldwell published in the Natural Resources Journal in April 1970.

Ecology and environment are used so often that there is a danger that peoples' brains will automatically shut off when they are sounded. We can't afford to let that happen; as the bumper sticker says---"ECOLOGY IS THE LATEST FAD."

What is the ecosystems approach to public lands?

Mr. Caldwell asserts that, in the past, policy for public lands in Government ownership has been politically expedient but ecologically unrealistic. Similarly, most public land planning has been based almost completely on economic and social factors. He does recognize that some planning and policy have considered ecological criteria. BLM has incorporated this in its planning system, but will the BLM way be meaningful? Caldwell notes, "To conceive an ecosystems approach to public land policy, one must first arrive at an ecological viewpoint toward the world of man and nature." It is then a total systems approach. However, Caldwell says, this is not the viewpoint of land speculators, farmers, miners, stockmen, lawyers, and bankers. They will tend to resist an ecosystems approach to the degree that it is inconsistent with the values, assumptions, institutions, and practices which affect land management today--taxation, banking, insurance, etc. Further, an ecosystems approach assumes a scope that embraces all land regardless of ownership or custody by law or political boundary. "The metes and bounds of ecosystems are determined by physical, biological, and cultural factors." This means that all land has a public character, not just land consigned to public ownership.

The revision of our Manual 1602 describes the environment in terms of the Spaceship Earth. Everything within the imaginary outer shell of the spaceship is the environment. The ecosystem is all the elements of that environment interacting on each other. This is the minimum concept that we must adopt in order to deal with the future.

How does all this affect conservation and development of natural resources, or management of publicly owned lands? Caldwell points out that the history of natural resources development has not been based on the comprehension and selective utilization of the ecosystem with the objective of its integrity and survival. This criterion has just recently been raised to a high level of visibility and has followed, not preceded, the natural resources concept of man-environment relationships. Caldwell contends "Conservation, as a concept, has been helpful principally as an intermediary proposition, midway between unrestricted competition among resource uses and an ecologically based view of public responsibility for the self-renewal capabilities of the ecosystem."

The need now as Caldwell put it is--"to identify, to protect, and in the interest of human welfare, to manage the natural ecosystems upon whose continuing viability human welfare depends."

Finally, let me read from the summation of Mr. Caldwell's paper:

> "In essence this article asserts that man's predicament is that of passengers on a spaceship whose destination is unknown, whose numbers and appetites are increasing, and who have been long accustomed to quarrelsome and improvident conduct. The passengers assume that the builders of the spaceship endowed it with self-renewing mechanisms so that they need take little thought of its maintenance. Moreover, because the ship is very large, they act as though it were infinite, although they are quite capable of calculating its carrying capacity for given levels of safety and convenience. They know that there may come a day when its resources will be taxed beyond capacity. But they are also possessed by the optimistic thought that before the day of disaster arrives, they will land on some habitable planet. And so there is doubt among them as to the practical necessity for restraint.
>
> "This is the paradigm of Spaceship Earth whose passengers are only now beginning to realize where they are. Only the ecologically informed among them are aware of the growing precariousness of their condition. Unfortunately, the practical men who are the leaders and managers of the enterprise, although well-informed in many important ways, are generally uninformed or misinformed in this important respect. Their attention is on the lesser mechanics of the enterprise and on the mediation of quarrels among the passengers that might destroy the ship prematurely. Is it then to be conceded that the outcome of the voyage is hopeless, that the passengers cannot be taught, and that the officers and crew are unwilling to learn? No incontrovertible evidence compels this conclusion. It is

> equally plausible to assume, because human civilization is in itself a highly improbable phenomenon, that the limits of its improbability have not yet been reached. Unlikely as it may be, it is possible that American Society, if not mankind generally, may reassess its circumstances with sufficient realism and insight to avoid ecological foreclosure. It is conceivable that people may voluntarily adopt ways of organizing their economy and of behaving in relation to the natural environment so as to bring the economy and the ecosystem into a dynamic, self-sustaining equilibrium."

If all this be true, what will be the rules of the game of life 30 years from now? What role will the public land play? What will our successors think of what we will have done in the next 10 years?

SYSTEMS PROCEDURES EVALUATION OVERVIEW

Presented By

Robert Twiss

Gee, I don't know. I had better watch what I say here. I'm pleased to be here. I wish I could have been here earlier but I've been down in Knoxville, Tennessee,and eastern Kentucky looking at strip mines, and I'll tell you I've been working up at Lake Tahoe with the Forest Service and feeling sorry for all these middle class recreationists because there's a little air pollution. After seeing the people in Appalachia and what the strip mines can do I can get a little better perspective.

This afternoon I'm suppose to say what an outsider sees in your planning program, tell you something good and bad about it, discuss its growth potential and solve this little problem about how to handle environmental issues, and I'm supposed to do this in about 15 minutes. I will try.

As an outsider of sorts I do see the BLM as a, well it's really the only agency at the moment that is in a sort of front-line position of trying to develop a rational and comprehensive planning program. And, all agencies are concerned about their planning processes. Some of them have old ones that they're making better and so on, but this is the only group I see making a real conscious attempt. There are a few State agencies, such as Michigan's resource agency, that have tried some new processes. But this is a pretty important thing, I think, because you're having all these problems and there's really nobody you can turn to for lots of guidance and answers. You've just got to keep at it yourselves, I think, and the outside is looking to you in this case for some answers. You can gain some things from other agencies, and so on, but this makes life more difficult when you keep having to solve things for yourself.

One thing about the kind of planning process you are using though, I called it a rational comprehensive approach. There is another planning process called "muddling through". In fact there is a scientific treatise on this called "The Science of Muddling Through," and just to compare the two procedures I thought I'd do that just a minute here because you'll see your problems in a little bit of perspective.

First of all "muddling through" is what most Bureaus and businesses do all the time when they don't have a rational planning program. It requires little information and you base your decisions heavily on past experiences, of course, and then if you're in doubt you pick up the phone and call a few friends and check things out with some agency people you know and a politician or two. After all,you've done this thing before, anyhow, so you know you're not going to get into too hot water. So that it's easier to make decisions.

The rational comprehensive thing is that it is very hard to get any help. You've got this pile of data and these maps and figures and all this, but you're really on your own and you've got to decide for yourself what to do and then when you ask friends for advice they say, "God, I'd like to help you but it would take me 6 weeks to understand all this information and so, well, good luck and go to it." In other words, they don't understand what you're doing so you've got to do it yourself. The "muddling through" brings up few alternatives because you kind of do what you've been doing in the past.

On the contrary, the kind of planning process you've taken on really is in the business of illuminating new alternatives and trying new ideas and testing yourself. And "muddling through" you don't know quite how to handle it, and you know you get that from your other divisions who always say "well, gee, we've never done that before, we can't do that." Past experience is great in muddling through, because the older you are and the more you've done the more chance you have of choosing the right decision. In rational comprehensive planning the past experience isn't much good because it doesn't deal in these new alternatives. You say I know we used to do it that way, but what if we do it a new way, what will happen and well, I just don't know is usually the answer.

Muddling through is good because it makes cheap decisions. That is, in an afternoon you can sit in the chair and you know, scratch your head and talk to a few people and come up with a decision and it doesn't cost very much. Now, for you to make like we can say, yeah, we'll put the ski area up here, or we'll go ahead with that sale this year, I think we can get away with it, or another permit isn't going to hurt too much or something--but, when you try to run that kind of simple decision through the rational comprehensive process, suddenly you need bales of information and all sorts of new maps and you've got to have technical advice on things you don't know about, and you have to spend about ten or fifteen thousand dollars to get what this guy in the next room is giving out for free--instant decision you see. So you've taken on something that does require a lot of data.

Also, you need professional scientific knowledge. I mean the data is no good unless you test out its implications, I heard that this morning. But, then you need someone who knows what the data means and how it applies to specific situations. So now you don't need just a guy who's had a little geology in college--you want an engineering geologist that knows about cliff stability. Or, you need an engineering geologist who knows about the acidity of the soil above the mined minerals and so on. And it turns out you don't need just a little advice, you need like fifty scientific experts on call day and night to help you make the decisions. So as you go down this road of rational comprehensive planning you're just going to have to be aware of these needs, and they will probably escalate. But, what you'll be doing, if you do it as I see it, is that you'll be making better decisions. And you have an added advantage, after you've made your decisions you'll have a lot of documentary material which you can use to explain your position, whereas the "muddling through" types go heavily on faith. They end up saying we've made this decision, we've been in this business a long time, you've got to trust in us. And, in rational comprehensive,you can say "look don't trust us, here it is, decide for yourself." And since faith and trust are in short supply nowadays I think that the rational comprehensive approach does have its advantages.

If I can read my own scribbling here I can go on. The problem came up this morning on priorities, and you're in a very good position here of having to decide. Do we go on with business as usual and do our planning on a "catch-as-catch-can" basis, or do we plan now and make decisions after we have the information? This is what we call in the environmental game the environmental imperative--that is, this is when the chips are down, someone has to decide whether you're going to go ahead and develop even though you don't know what you're doing. That's what we do most of the time. Or, whether you say, "no, we're not going to go ahead until we find out its implications, test them out and make a knowledgeable decision." An environmentalist would say, if you don't have enough information, wait, and the developers will tell you if there's not enough information to use the best available data, make a decision and we'll hope it works out and we'll check back later and if it doesn't we'll change our minds. But, environmentally this can be disastrous as we get into irreversible changes.

I did want to point out that Forest Service did something the other day,that made me very happy since I do work with them, in Tahoe basin planning situation they did--I think this may be a first for the agency, I'm not sure--but they did come up with a sort of moratorium for the Lake Tahoe Basin, saying look we're in a planning process, the Bi-State agency is trying to get its feet on the ground doing a regional plan for Lake Tahoe Basin, we as the Forest Service are not going to issue any permits or make any major decisions dealing with the basin until these plans are in. In effect, they said we're going to wait until we have the data, we've finished our plans and then we'll allow special use permits, and so on. And it wasn't an idle gesture. This has a lot of heavy political and financial implications for certain developers and local politics and all of that, so that it's a very tough decision and had quite an impact.

Similarly, the Secretary of the Army has issued a directive to the Corps of Engineers saying no bridges, piers, dredging, filling and that sort of thing until the Bi-State agency plan is done.

When the plan is done come back and we'll be happy to talk to you about your permits and so on. So here are some precedents I think that bear well for the planning profession. That is, when we can get this kind of teeth put into our plans, why, suddenly a lot of people become very interested in helping get your plan done in a big hurry, because they can't get on with their business until you're done with your work. And I'll tell you it makes quite a difference in getting help when you're working.

Now as to how to handle the environment since I've solved all these other problems for you, I was supposed to give you a definition and I will, but I hate to because I know it'll cause a lot of trouble. But, I have a sort of a simple one saying that environment has to do not so much with resources, because they're related to some ultimate use. But rather at a place the situation in which certain things happen. So you talk about an environment not so much as an environment for something. The environment for working, the environment for communing with nature, the environment for fishing, the environment for something. And then you find out what that something is, you have a clientele group that does that, whatever it is, fishing, or communing or whatever, and then you can talk about what kind of a space in a place and what kind of a crop and scenery and fish and water and air and all of that that it takes to engage in that activity at some certain level.

So that helps, but I didn't solve your problem, but it helps me to keep environment related to something that I can measure and work with. If it's any consolation, I can say that all Federal agencies that I have any contact with are grappling with this very problem. They've all sent the Environmental Policy Act off to their legislative or their legal counsel and said, good God, does this mean we have to do one of these reports every time we cut a tree or build a road or give a special use permit or so on? How does it affect our budget procedures? Do we have to have public hearings for a multiple use plan, and a long list of questions and nobody has any answers. The TVA has a special study going on trying to figure out what to do with the Act themselves. The Department of Transportation has commissioned a study by a group of consultants to tell them how to reorganize one of their offices in Washington to be an environmental branch of the Department of Transportation that would do these studies, whatever they are. And anyhow every agency is in the midst of trying to find out "what is environment?" If we aren't environmentalizing our work already, how do we do things so that we conform to the Act?

Now, interestingly enough these Public Land Law Review Commission studies are a little bit similar to the kinds of plans you work with, because they did what they call commodity reports. I don't know if you've seen the Commission reports, but they have commodities on coals and other minerals, and a commodity report on timber and a commodity report on recreation and so on, something like you do in your planning. And they had thought at the beginning of their work that, in the end, they would just take these commodity and resource reports, read them all, and put them together and that they would see these environmental interrelationships and conflicts and so on, and that they could kind of ferret out the environmentalism at the end, and that wouldn't be too hard.

And, of course, what they got in the end was a lot of commodity reports, like so many million board feet of timber, so many tons of coal and so on, and then every report concluded with a few paragraphs saying, of course, there are many environmental externalities associated with the gaining of this commodity, and these are sometimes very serious, in fact, so serious sometimes we can't even do this activity in certain places, but this was beyond the scope of our studies, and we didn't have any information and so on, and that was it. And everybody came up to the environment and said, gee, this is really important and then sort of backed off saying that it was a little bit beyond the scope of their particular interest. And I think you have a little bit of the same kind of thing where you have resource functions, you have people that are resource oriented, you've got biases which tend to be commodity oriented probably, and so the environmental interrelationships just don't get handled.

I've done some equivalents of URA's in my work, and I find the same thing is true, even without trying. I try to do an environmental report, but it turns out the data was collected for commodity purposes, so that you end up being sort of like your plans are already, sort of resource oriented. For example, USGS maps on geology are prepared either for academicians on, when was the rock formed and like the pleistocene plateau you were talking about before. Or they're made for the mining industry, like where valuable minerals might be found. And I want to know what happens to the stuff if I blast it, grade it, pave over it, start carting it away or put some in a stream, and what does it do to the fish habitat if it gets in the streams and so on. And I asked a bunch of questions that the inventory people didn't have in mind when they completed their map. And when asked, is there any relationship between the map you just gave me on the geology and my environmental question, very often the honest answer if there is no relationship whatever. And all those pretty green and red and purple colors are to be forgotten.

You need a new kind of map, in other words. And the timber stand maps were prepared for commercial logging and so on down the line. So there isn't much information around for free that's collected for environmental purposes. So you're left with the job of interpreting data that was collected for something else a long time ago, for environmental problems that are going to happen some time in the future, and for this you need good advice and probably some new information. So I've always had to go through this sort of resource oriented approach and then at the end do something extra for the environment, trying to synthesize this stuff and analyze it, sort of milk it for its environmental implications.

One trick we've come up with in this vein is to use a sort of land system approach. Now I'll take just a second, I've only got about three minutes. There are three kinds of inventory data. There's a book, incidentally, called "Land Evaluation" by Stuart which comes out of McMillan of Australia. And it's a result of the symposium on Land Evaluation and I'll give Bob a citation to that. But they say there are three levels of data. And one first is inventory, in very large areas of, State level or larger, and they describe resources in general and they're great for inventory, but usually they raise all sorts of questions, but they don't give you very many answers, because they're too broad. Then there's another level which is the sort of planning unit level, which is what you guys used in the Unit Resource Analysis, but usually what you do are sort of sneakily used as broad inventory information, and try to generalize downward to your unit resource, and this is tricky business and done at great risk, and very often invalidly, but it's the best you've got so you go ahead and do it. And then the third level of analysis is a site or project, where you really go out and gather new information and you know something in detail.

But what the Australians dreamed up to do in this middle planning unit level was to create land systems. I'll try to draw one here. OK, we're looking at a block of land in three dimensions here and this is a stream running down and they try to pile everything into this system. They say something about the geology, the vegetation, the soils, stream characteristics and so on, and try to make these systems more or less homogeneous units. So maybe a planning unit of yours might have six or eight of these land systems. And then you take generalized engineering properties, engineering actions like paving, grading, cutting, trenching, land clearing, burning, insecticide application, and so on. We deal in general resources but engineers don't give us general engineering applications. So we've got to come up with a kind of a new scheme which talks about regional engineering or regional land management and overlay it on this regional environment. You've got to create this for yourself, and then say, if we put some of these general engineering implications down on this, what are some of the general environmental implications?

Now I don't know if this can fit your present scheme in the URA, but I think it might. Where you have to say something about the environmental interrelationships between engineering applications on the land and the environment's response to this. And maybe you can do this according to sort of land systems, I don't know.

OK, what you really want to get out of this are what is the environment and what clientele groups use this area? What kind of environment is needed for them to perform their activities? What are measurements of environmental change? I mean, I ask ecologists all the time, you know, give me some indices of environmental or ecosystemic change? What are some good measures? And they say, well, gee, everything is related to everything else, and if you touch one thing why the dominos fall. And I say, yeah, I know it's related, and how much, but I want to know which is related to which, and which are the heaviest dominos, and so on. And then they say, well it's all related, you know, they all give you the same sort of non-operational response, and most ecologists can't really tell you.

And it turns out that there are only about two or three measures of an ecosystem. One is biomass, and another is species composition, let's say, and you can measure variety. But then you start running out. And then there are also principles of ecology, like succession, and predator-prey relations and this kind of thing, and this is really kind of great stuff, and as it turns out in the end, as far as I can figure out. So you really aren't very good measurers of ecosystemic change or environmental change. And that's really what we want, we want to know what the hell's going to happen if we put a road in here, we let them mine, what's going to happen on the site, what's going to happen off site, and how much of it's going happen and so forth. And most ecologists don't answer this at all. So we're going to have to do a lot of work anyhow, as planners, to get ecologists to give us indices of environmental change and tell us how to measure them well.

OK, now so that gets us into sort of two areas. One is life support systems, which all the kids are worried about now, air and water, and Spaceship Earth and all this, and I think we need to be concerned about this too. Let's say we ask the question "to what extent does vegetation ameliorate air pollution?" Everybody's worried about that and we manage vegetation. Not much in the way of answers. There's no inventory information that gives you the plant communities that are best at absorbing air pollution and it would be a very nice thing to know. So what we're going to come up with or what you people are going to come up with, when you get to this MFP level and you start trying to make some tough decisions, you're going to come up with a long list of new questions that need to be answered and nobody's going to have these answers, I don't think. So then you have to go back and do new surveys, get more information, and really be aggressive in getting university people, in getting other Government agencies to start providing you with the data you need to make your decisions.

To conclude I can just say that in the brief exposure I had to your planning system in reviewing it for the PLLRC, Mike Heyman who was the law professor that I worked with, we were both impressed with the quality of the system itself. We didn't see anything in the structure of the system that would either prevent you from making the kind of decisions you wanted or anything like that. And we ended up with some recommendations like I've heard already here this morning that you need more funds, you need a lot more personnel. It was very sad in some cases to find one man wearing three or more of these hats as the resident geologist, forester, wildlife expert and so on. And we pointed this out to the Commission and we see that as probably the most serious lack. So we didn't end up with a critique of the structure of the system itself, but rather a hope that more resources would be found to help you along. I think, though, as working inside the system as you people are you ought to be very self-critical of the system as you go along, as I've seen you being this morning, because you're the only ones really that can see its needs. And I just wish you luck in working this thing out.

Thank you.

CLOSING REMARKS

By

Irving Senzel

First, I want to thank our sister agencies who accepted our invitation for participation. I don't know how all the agencies went about choosing their representation. I know two Interior agencies went at it very carefully. I would assume, from the caliber of people sent and their direct relationship to our particular concern, that all the agencies took the invitation very seriously and made a very careful selection of their representatives. I want to thank all of them, of course, for the fine words, we don't always get those and we certainly appreciate it when we do,for your participation during this meeting and for the excellent presentation you made this morning. I hope some of you will be able to return to future meetings.

As to the success or failure of the conference, we may have made a mistake by stating in our brochure and in our opening remarks what we intended to accomplish. Now we've got about 80 people who are their own judges of whether we did it or not, so I don't want to go too far in commenting on the relative success of this meeting. Let me say that I'm personally thoroughly satisfied. I don't want to say the meeting exceeded my expectations because this group and other BLMers always do such a fine job that you expect them to do something unusual.

Let me thank you all personally for the obvious concern you have with the planning system, for the depth of consideration that you've given to all the problems, and for your stamina this week. You've all been working, and we're looking forward to many and rich fruits from this particular conference.

We're not quite sure whether our decision was correct to keep this meeting pretty much to the planners in the organization. We did have some line-specialists to give us the necessary inputs from their point of view. But there's some debate in our minds whether this year would have been the time to have the line personnel in rather than planners. On balance, I think probably we were correct. We have certain things to do before the system is reasonably well-understood throughout the organization. That, I think will be done this year. We'll have enough experience by the end of the year to have our line people in for a real exploration of how far and how fast we can go in reaching our planning and programming goals.

We're going to follow up with the line as much as we can, in as many ways as we can. We're definitely going to try to get some of the people who made presentations this week to appear with a similar type of presentation at some of our key meetings when all of our State Directors are together, or when our technical specialists in a particular field get together. Some of these tapes, with the permission of those who spoke, will be distributed around the Bureau so that the messages in them can be expressed in the same tone and emphasis that we heard them here.

Next year, as I say, our meeting will probably be more line oriented. We don't know now, of course, what the theme might be, but we'll be in touch with key people in the planning business in the Bureau to shape one up at the proper time.

This seems to be an appropriate time for me to recognize the fine work that was done by our Washington staff, by our California people, and by other contributors to this conference. I think you found cohesion, integrity, consistency, and quality throughout our five days here and that can only be done by planning. That speaks well for the type of planning specialists we have here--the guests mentioned it this morning and the guests of other mornings have mentioned it to me personally. I've heard it from many of our colleagues how impressed they are with the ability and the personality of our planning staff. I think we've got a fine asset here and I'm going to be much on the alert to prevent raiding from our sister agencies.

One thing I don't think that we've got fully this week is how far we've actually progressed in our planning effort and particularly in the utilization of the techniques and the results of planning. This is obscured by the lack of measurable units and by the hundreds of different operations and activities taking place that draw on these and don't come into a central point to get stacked up into a pile.

We see already, for example, in our legislative work the values of the products of the planning system--and further, the opportunities. Let me say that we've been getting compliments for our legislative staff (none of them are here today so I can say this) from various units in the Bureau and in the Department for the quality of our legislative reports. Our report on the Missouri Breaks has been praised. This was based on field studies utilizing the planning system techniques.

On the other hand, the Los Angeles Watershed bill which seems to be a simple thing on its face proved otherwise as we went into it. We found such hidden complexities that we decided the only way to come up with a reasonable description of what the impact of the bill would be, and therefore what position the Department should be, would be to send it back to California to make, in effect, a management framework plan for us where we would cover use as the basis for our report.

Those are just two little examples of how our planning system has been producing for the organization as a whole. I don't think our problem is to make sure that the system will be used. We have to make sure that we recognize that we're using it. Of course, what we're doing now is only a small percentage of what the system will eventually produce. At the present time my own feeling is that it's fully worth the funds that we're spending now in the development and operation of the system.

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